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PUBLIC UTILITY COMMISSION OF TEXAS



APPLICATION OF
SOUTHWESTERN ELECTRIC POWER COMPANY
FOR AUTHORITY TO CHANGE RATES

REBUTTAL TESTIMONY OF
DYLAN W. D'ASCENDIS, CRRA, CVA
FOR
SOUTHWESTERN ELECTRIC POWER COMPANY

APRIL 23, 2021

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Schedule DWD-3R:	Correction to Staff's Conventional Risk-Premium Estimate Using Moody's Baa Rated Utility Bond Yields
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Schedule DWD-14R:	Calculation of Common Equity and Long-Term Debt Ratios for Operating Companies in Dr. Woolridge's Proxy Group

Schedule DWD-15R:	Demonstration of the Inadequacy of a DCF Return Rate Related to Book Value When Market Value is Greater than Book Value
Schedule DWD-16R:	Calculation of Indicated DCF Applied to Book Value Capital Structure of Dr. Woolridge's Electric Proxy Group
Schedule DWD-17R:	Correction to Dr. Woolridge DCF Study

1 **I. INTRODUCTION, PURPOSE, AND SUMMARY**

2 **Q. PLEASE STATE YOUR NAME, AFFILIATION, AND BUSINESS**
3 **ADDRESS.**

4 A. My name is Dylan W. D’Ascendis. I am employed by ScottMadden, Inc. as
5 Director. My business address is 3000 Atrium Way, Suite 241, Mount Laurel, NJ
6 08054.

7 **Q. ON WHOSE BEHALF ARE YOU SUBMITTING THIS TESTIMONY?**

8 A. I am submitting this rebuttal testimony (referred to throughout as my “Rebuttal
9 Testimony”) before the Public Utility Commission of Texas (“Commission”) on
10 behalf of Southwestern Electric Power Company (“SWEPCO” or the
11 “Company”).

12 **Q. DID YOU FILE DIRECT TESTIMONY IN THIS PROCEEDING?**

13 A. Yes, I did.

14 **Q. WHAT IS THE PURPOSE OF YOUR REBUTTAL TESTIMONY?**

15 A. The purpose of my Rebuttal Testimony is three-fold. First, I update the analyses
16 in my Direct Testimony to reflect current data. Second, I address capital market
17 conditions and their effect on the Company’s investor-required return. Third, I
18 respond to the Direct Testimonies of Mr. Mark Filarowicz, who testifies on behalf
19 of Commission Staff (“Staff”), Mr. Michael P. Gorman, who testifies on behalf of
20 Texas Industrial Energy Consumers (“TIEC”), Dr. J. Randall Woolridge, who
21 testifies on behalf of the Cities Advocating Reasonable Deregulation (“CARD”),
22 and Ms. Lisa V. Perry, who testifies on behalf of Walmart Inc. (collectively, “the

1 Opposing Witnesses”) as they relate to the Company’s return on common equity
2 (“ROE”) on its Texas jurisdictional rate base.

3 **Q. PLEASE SUMMARIZE YOUR CONCLUSIONS.**

4 A. Due to the fluid market conditions as a result of the COVID-19 pandemic
5 (“COVID-19”), I have updated my ROE analyses as of March 31, 2021. Based on
6 these updated analyses, my range of reasonable ROEs attributable to SWEPCO is
7 between 10.14% and 10.97% (unadjusted) and 10.43% to 11.26% (adjusted).
8 Therefore, my specific ROE recommendation of 10.35% for SWEPCO in this
9 case continues to be reasonable, if not conservative. In view of current markets
10 and the updated results of my ROE models, ROEs of 9.00% (CARD), 9.15%
11 (TIEC) and 9.35% (Staff), are insufficient at this time.¹

12 **Q. HAVE YOU PREPARED SCHEDULES IN SUPPORT OF YOUR**
13 **RECOMMENDATION?**

14 A. Yes. I have prepared Schedules DWD-1R through 17R, which were prepared by
15 me or under my direction.

16 **Q. HOW IS THE REMAINDER OF YOUR REBUTTAL TESTIMONY**
17 **ORGANIZED?**

18 A. The remainder of my Rebuttal Testimony is organized as follows:

19 • Section II – Provides my updated analyses;

¹ While Ms. Perry recommends that the Commission should not approve an ROE greater than 9.60% in this proceeding, she does not provide an independent analysis of the Company’s cost of common equity. Given the evidence in this proceeding, Ms. Perry’s recommendation of an ROE no higher than 9.60% is also insufficient at this time.

- 1 • Section III – Provides my response to the Opposing Witnesses’
2 interpretation of current capital market conditions;
- 3 • Section IV – Contains my response to Mr. Filarowicz;
- 4 • Section V – Contains my response to Mr. Gorman;
- 5 • Section VI – Contains my response to Dr. Woolridge;
- 6 • Section VII – Contains my response to Ms. Perry; and
- 7 • Section VIII – Summarizes my conclusions and recommendations.

8 **Q. PLEASE SUMMARIZE THE KEY ISSUES AND RECOMMENDATIONS**
9 **OFFERED BY OPPOSING WITNESSES THAT YOU ADDRESS IN YOUR**
10 **REBUTTAL TESTIMONY.**

11 A. My Rebuttal Testimony responds to the Opposing Witnesses’ interpretations of
12 current capital market conditions and the errors embedded in each of their
13 assumptions. I also respond to the substantive recommendations offered by the
14 Opposing Witnesses in their direct testimonies: Mr. Filarowicz’s analyses fall
15 short in the following respects:

- 16 • His misapplication of his risk premium model (“RPM”);
- 17 • His misapplication of the Capital Asset Pricing Model (“CAPM”); and
- 18 • His failure to recognize the Company’s greater relative risk to his proxy
19 group in his recommended ROE.

20 Mr. Gorman’s shortcomings in his analyses include:

- 21 • His use of sustainable growth and multi-stage Discounted Cash Flow
22 (“DCF”) models;

- His misapplication of the RPM;
- His misapplication of the CAPM; and
- His failure to recognize the Company's greater relative risk to his proxy group in his recommended ROE.

Dr. Woolridge's analyses fall short in the following respects:

- His sole reliance of the DCF model for his ROE recommendation;
- His misapplication of the DCF model; and
- His failure to recognize the Company's greater relative risk to his proxy group in his recommended ROE.

My Rebuttal Testimony also addresses the unfounded critiques of my Direct Testimony by the Opposing Witnesses.

II. UPDATED ANALYSIS

Q. HAVE YOU UPDATED YOUR COST OF COMMON EQUITY ANALYSES FOR YOUR REBUTTAL TESTIMONY?

A. Yes, I have. Due to the passage of time since my Direct Testimony analysis (data as of July 31, 2020), I have updated my analyses using data as of March 31, 2021.

Q. HAVE YOU UPDATED YOUR UTILITY PROXY GROUP FOR YOUR UPDATED ANALYSES?

A. Yes, I have. On October 21, 2020, PNM Resources (“PNM”) agreed to combine with AVANGRID in a strategic merger transaction, so I eliminated them from my proxy group. Similarly, at the time of my Direct Testimony, I excluded Evergy, Inc. (“EVRG”) due to reported rumors of a possible merger. Because EVRG has not announced a merger, I have included it in my updated Utility Proxy Group.

1 **Q. HAVE YOU APPLIED ANY OF YOUR ROE MODELS DIFFERENTLY IN**
2 **YOUR UPDATED ANALYSES?**

3 A. No, I have not. However, in response to the Opposing Witnesses' testimony
4 regarding my credit risk adjustment, I have averaged the Moody's Investor
5 Services ("Moody's") and Standard & Poor's ("S&P") bond ratings for both
6 SWEPCO and my Utility Proxy Group. Using the average Moody's and S&P
7 bond ratings results in an adjustment of one-third of a recent spread between A2
8 and Baa2 utility bonds, as opposed to a two-thirds adjustment as will be discussed
9 below.

10 **Q. WHAT ARE THE RESULTS OF YOUR UPDATED ANALYSES?**

11 A. Using data available as of March 31, 2021, my updated results are presented in
12 page 2 of Schedule DWD-1R and in Table 1, below.

13 **Table 1: Updated Cost of Common Equity Results**

	<u>Utility Proxy Group</u>
Discounted Cash Flow Model	9.32%
Risk Premium Model	10.70%
Capital Asset Pricing Model	12.03%
Market Models Applied to Comparable Risk, Non-Price Regulated Companies	<u>11.81%</u>
Indicated Range of Common Equity Cost Rates before Adjustment	10.14%-10.97%
Business Risk Adjustment	0.20%
Credit Risk Adjustment	<u>0.09%</u>
Recommended Range of Common Equity Cost Rates after Adjustment	<u>10.43%-11.26%</u>
Recommended Cost of Common Equity	<u>10.35%</u>

1 In view of the unadjusted and adjusted ranges of ROE, I maintain my
2 original ROE recommendation of 10.35%. Upon reviewing my updated results,
3 two items became apparent: 1) the indicated results of my ROE models have
4 increased from my analyses presented in my Direct Testimony, which is a
5 directional indicator that the investor-required return has increased since my
6 Direct Testimony and 2) my recommended ROE of 10.35%, which is now lower
7 than my adjusted range of ROEs after adjustment, is a conservative measure of the
8 Company's ROE at this time.

9 **III. CAPITAL MARKET CONDITIONS**

10 **Q. PLEASE SUMMARIZE THE OPPOSING WITNESSES'**
11 **INTERPRETATIONS OF THE CURRENT CAPITAL MARKET**
12 **ENVIRONMENT.**

13 A. While Mr. Filarowicz does not directly mention capital market conditions, both
14 Mr. Gorman and Dr. Woolridge review the impact of COVID-19 on the current
15 capital market and the economy in general. Both Mr. Gorman and Dr. Woolridge
16 note that interest rates and capital costs are expected to remain somewhat muted
17 in the long-term.² Mr. Gorman and Dr. Woolridge both also note that the U.S.
18 equity market and utilities in general have performed quite well recently, with Dr.
19 Woolridge also noting that volatility has significantly decreased.³

20 **Q. DO YOU AGREE WITH MR. GORMAN'S AND DR. WOOLRIDGE'S**
21 **ASSESSMENT OF CAPITAL MARKET CONDITIONS?**

22 A. No, I do not. Mr. Gorman and Dr. Woolridge primarily focus on declining

² Gorman Direct Testimony, at 14-17; Woolridge Direct Testimony, at 9-10.

³ Gorman Direct Testimony, at 10, 19-20; Woolridge Direct Testimony, at 12-13.

1 interest rates as indicative of a lower cost of capital for utility companies, which
2 does not reveal the full extent of COVID-19 on the market in general, and
3 utilities, specifically. When the drivers of risk are viewed in their entirety, it is
4 quite clear that investor-required returns on utility stocks are increasing. As will
5 be explained in detail below, the turmoil (*i.e.*, volatility) in markets attributable to
6 COVID-19 has increased risk for the entire economy generally, and utilities,
7 specifically.

8 **Q. PLEASE COMMENT ON THE RECENT TREND IN INTEREST RATES.**

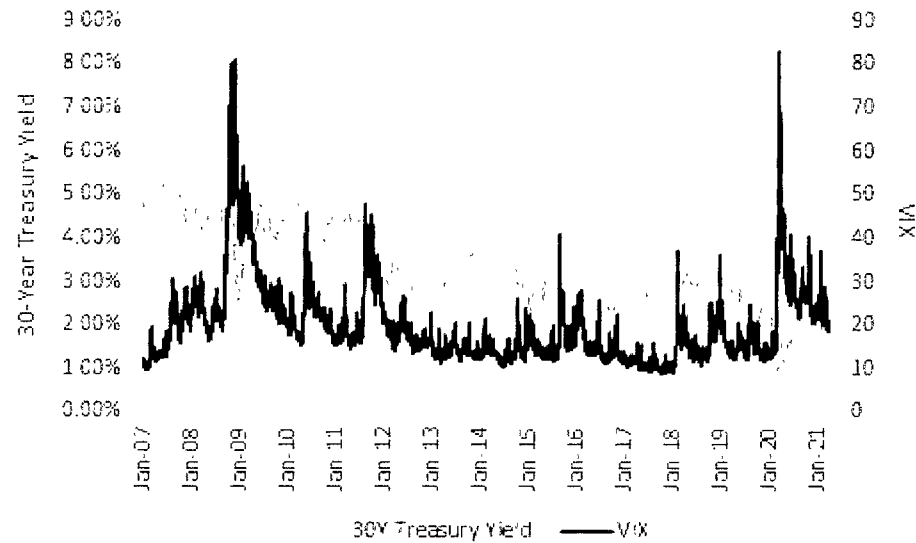
9 A. Both Mr. Gorman and Dr. Woolridge take the position that the recent decline in
10 interest rates is indicative of lower capital costs.⁴ However, this is incorrect.
11 Significant and abrupt increases in volatility tend to be associated with significant
12 and abrupt declines in Treasury yields. That relationship makes intuitive sense; as
13 volatility (*i.e.*, risk) increases, investors seek to avoid a capital loss by investing in
14 Treasury securities in a “flight to safety”. Because Treasury yields are inversely
15 related to Treasury bond prices, as investors bid up the prices of bonds, they bid
16 down the yields. As Chart 1 below demonstrates, decreases in the 30-year
17 Treasury yield are coincident with significant increases in the Chicago Board
18 Options Exchange (“CBOE”) Volatility Index (“VIX”), a visible, widely reported,
19 and popular measure of the stock market’s expectation of volatility.⁵

⁴ Gorman Direct Testimony, at 12-14; Woolridge Direct Testimony, at 9.

⁵ The VIX is a calculation designed to produce a measure of constant, 30-day expected volatility of the U.S. stock market, derived from real-time, mid-quote prices of S&P 500 Index call and put options. Source: www.cboe.com/vix.

1

Chart 1: 30-Year Treasury Yields vs. VIX⁶



2

3 **Q. ARE INTEREST RATES AND CAPITAL COSTS EXPECTED TO**
4 **REMAIN LOW?**

5 A. No. Despite the impact of volatility on Treasury yields for much of 2020, yields
6 are not expected to remain low. First, looking to the forecasts from *Blue Chip*
7 *Financial Forecasts* (“*Blue Chip*”), which are referenced by Mr. Gorman in his
8 discussion of expected interest rates, we observe that *Blue Chip’s* projected
9 interest rate has risen from 2.10% to 2.70% from January 2021 to April 2021.

⁶ Source: Bloomberg Professional.

1 **Table 2: *Blue Chip* Interest Rate Forecast Six Quarters Out**⁷

Publication Date	Forecast Quarter	Forecasted 30-Year Treasury Yield
January 2021	Q2 2022	2.10%
February 2021	Q2 2022	2.20%
March 2021	Q2 2022	2.40%
April 2021	Q3 2022	2.70%

2 The 30-year Treasury yield last reached 2.70% on May 29, 2019, nearly
3 two years ago. Given that the Federal Reserve has cut rates five times since May
4 29, 2019 (three times in 2019, and then subsequently twice again in response to
5 COVID-19), Mr. Gorman’s singular view that market participants are becoming
6 comfortable with today’s low-cost capital environment⁸ does not align with fact
7 that Treasury yields have risen despite the sustained actions of the Federal
8 Reserve. As discussed more in depth below, clearly market participants are
9 looking beyond the near-term.

10 **Q. MR. GORMAN NOTES THAT “COMMON STOCK VALUATIONS ARE**
11 **IMPACTED BY LONG-TERM MARKET OUTLOOKS.”⁹ PLEASE**
12 **RESPOND.**

13 A. First, as noted above, Mr. Gorman’s view on the market’s near-term interest rate
14 expectations and “comfortability” is incorrect. However, as Mr. Gorman notes,
15 one can readily observe the impact of long-term expectations on the U.S. equity
16 markets. For example, the Federal Reserve’s “longer run” projection for the
17 Federal funds rate has remained in the range of 2.30% to 2.50% since September

⁷ *Blue Chip Financial Forecasts* for the months January-April 2021.

⁸ Gorman Direct Testimony, at 14.

⁹ *Ibid* , at 18.

2020.¹⁰ Given that the expectation for 2021 is 0.10%, it is clear that market participants are looking to the long-term in their equity valuations, as indicated by the recent rise in the U.S. equity markets.

Q. IS A RISE IN U.S. EQUITIES INDICATIVE OF LOWER CAPITAL COSTS FOR UTILITIES?¹¹

A. No, not necessarily. Despite Mr. Gorman’s claim that “utility investments have been less volatile during extreme market downturns,”¹² as shown on Schedule DWD-2R and in Table 3, below, from February 3, 2020 to March 31, 2021, utilities were generally more volatile (*i.e.*, risky) than the market indices, and had returns that underperformed the Dow Jones Industrial Average (“DJIA”) and the S&P 500.

Table 3: Annualized Volatility and Returns of Utility Groups and Market Indices February 2020-March 2021¹³

	Proxy Group	Dow Jones Utility Average (DJU)	Utilities Select SPDR (XLU)	Dow Jones Industrial Average	S&P 500
Price Change	-11.87%	-6.20%	-7.16%	16.72%	23.17%
Annualized Volatility	43.48%	36.59%	36.80%	34.47%	32.64%

Table 3 also demonstrates that utilities have not fully participated in the recent market increase. Specifically, looking to the most recent six-month period as shown in Chart 2 below, we observe that utilities (as measured by the Utilities Select SPDR (“XLU”)) have trailed the rise in the general market by

¹⁰ <https://www.federalreserve.gov/newsevents/pressreleases.htm>

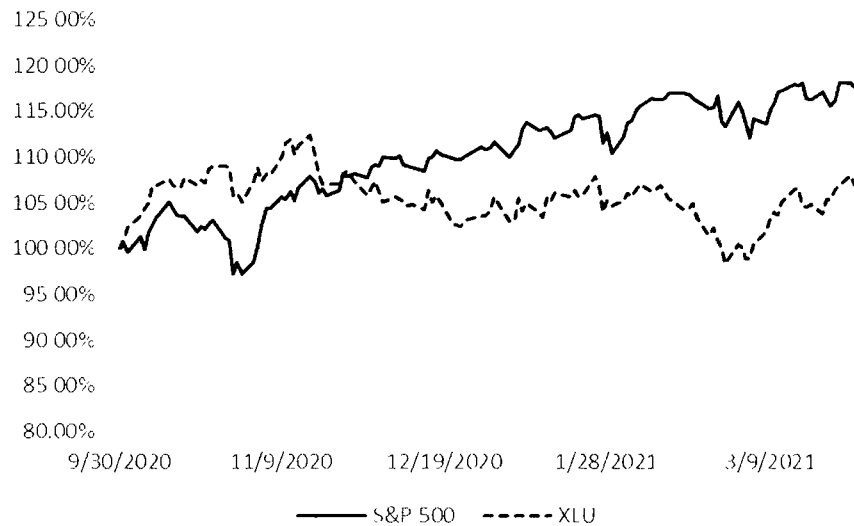
¹¹ Gorman Direct Testimony, at 9-11.

¹² Gorman Direct Testimony, at 10.

¹³ Source: S&P Global Market Intelligence.

1 approximately 10%, a period in which the S&P 500 has traded at or near all-time
2 highs.

3 **Chart 2: Relative Six-Month Performance for the S&P 500 and XLU¹⁴**



4 Utility stocks' performance over the last six months has been considerably
5 more uneven than the overall market. Simply, when the certainty of growth does
6 not match the required return, performance suffers, as observed in the
7 performance of utility equity investments relative to that of the market.

8 **Q. IS MARKET VOLATILITY EXPECTED TO INCREASE IN THE NEAR**
9 **TERM?**

10 A. Yes. Even though investors are looking to the longer-term, it does not necessarily
11 indicate that they are looking past near-term volatility (or risk). One means of
12 assessing market expectations regarding the future level of volatility is to review
13 the CBOE's "Term Structure of Volatility", which is described by the CBOE as
14 follows:

¹⁴ Source: S&P Global Market Intelligence.

The implied volatility term structure observed in SPX (S&P 500 Index) options markets is analogous to the term structure of interest rates observed in fixed income markets. Similar to the calculation of forward rates of interest, it is possible to observe the option market's expectation of future market volatility through use of the SPX implied volatility term structure.¹⁵

As shown in Table 4 below, the implied volatility is expected to increase and remain approximately 27% above historical volatility¹⁶ until at least January 2022.

Table 4: CBOE Term Structure of Volatility¹⁷

Date	Projected VIX
April 2021	17.78
May 2021	20.08
June 2021	21.63
July 2021	22.56
August 2021	23.63
September 2021	24.07
October 2021	24.48
November 2021	24.71
December 2021	25.27
January 2022	24.21

As discussed above, investors tend to react to increases in extreme market uncertainty by moving away from equity securities (including utilities) to Treasury securities, pushing down long-term Treasury yields. As a result of this volatility, both long-term Treasury and utility bond yields remain volatile, as shown on Charts 3 and 4, below, as seen in its coefficient of variation (“CoV”):¹⁸

¹⁵ Source: www.cboe.com/trading-tools/strategy-planning-tools/term-structure-data (clarification added).

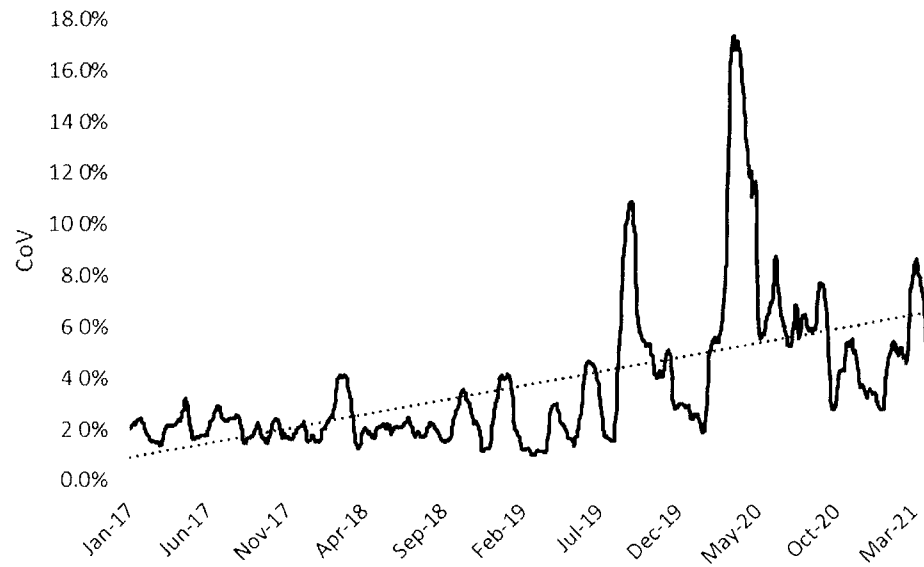
¹⁶ The long-term average price of VIX is approximately 19.00, which is similar to the long-term standard deviation of market returns.

¹⁷ Source: <http://www.cboe.com/trading-tools/strategy-planning-tools/term-structure-data>, accessed March 31, 2021.

¹⁸ The coefficient of variation is used by investors and economists to determine volatility.

1

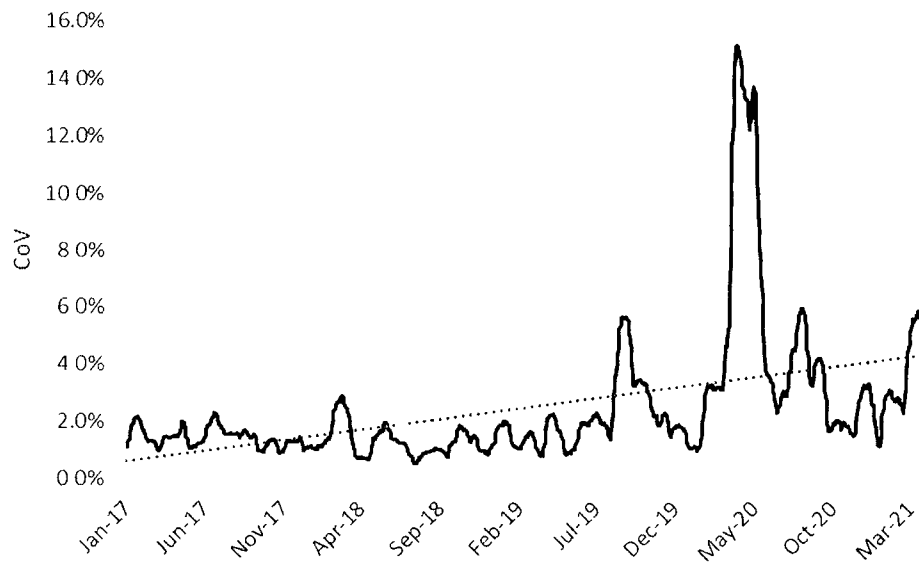
Chart 3: Coefficient of Variation in 30-Year Treasury Yields¹⁹



2

3

Chart 4: Coefficient of Variation in A-Rated Public Utility Bonds²⁰



4

¹⁹ Source: Bloomberg Professional. Data through March 31, 2021.
²⁰ *Ibid*

1 **Q. HOW DOES INCREASED MARKET VOLATILITY AFFECT A UTILITY**
2 **INVESTOR’S REQUIRED RETURN?**

3 A. Increased market volatility increases both utility stock volatility and the
4 correlation of those stocks’ returns to overall market returns. Increases in both
5 measures would likewise increase the required return for utility investors. This
6 can be observed by looking to the relationship between utilities and market
7 indices. Therefore, I have calculated the correlation coefficients of the price
8 changes of several groups of utilities relative to the S&P 500 and the DJIA from
9 January 31, 2020 to March 31, 2021. Table 5, below, shows correlation
10 coefficients for the following relationships:

- 11 • The price changes of the S&P 500 relative to the price changes of the
12 Combined Proxy Group;
- 13 • The price changes of the S&P 500 relative to the price changes of the Dow
14 Jones Utility Average (“DJU”);
- 15 • The price changes of the S&P 500 relative to the price changes of the
16 XLU;
- 17 • The price changes of the DJIA relative to the price changes of the
18 Combined Proxy Group;
- 19 • The price changes of the DJIA relative to the price changes of the DJU;
20 and
- 21 • The price changes of the DJIA relative to the price changes of the XLU.

Table 5: Calculation of Correlation Coefficients for Utility Groups Relative to Market Indices from February 2020 through January 2021²¹

Group	S&P 500	DJIA
Combined Proxy Group	80.03%	80.10%
DJU	80.74%	80.82%
XLU	80.91%	80.85%

As shown on Table 5, utility stocks have been trading in tandem with market indices during the current market dislocation, which is consistent with the risk and return data shown on Table 3. The behavior of utility stocks to move in tandem with the market during market distress is not limited to the current period. During the Great Recession (December 2007 to June 2009), correlations between these same groups were similar, as shown on Table 6, below:

Table 6: Calculation of Correlation Coefficients for Utility Groups Relative to Market Indices from December 2007 to June 2009²²

Group	S&P 500	DJIA
Combined Proxy Group	79.95%	81.21%
DJU	81.57%	82.13%
XLU	78.36%	78.59%

This increasing correlation is not surprising. As noted in my Direct Testimony,²³ as Morningstar recently explained, during volatile markets there is often little distinction in returns across assets or portfolios. That is, “correlations go to 1.”²⁴ A direct consequence of increased correlations is higher Beta coefficients and ultimately higher investor-required returns for utilities.

²¹ Source: S&P Global Market Intelligence.

²² Source: S&P Global Market Intelligence.

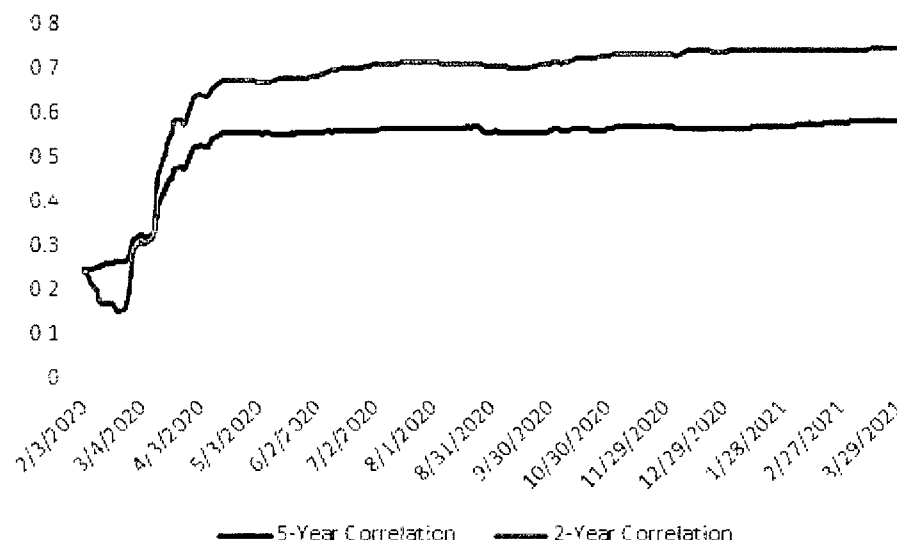
²³ D’Ascendis Direct Testimony, at 11.

²⁴ Morningstar, *Correlations Going to 1: Amid Market Collapse, US Stock Fund Factors Show Little Differentiation*, March 6, 2020.

1 **Q. WHAT DO STRONGER CORRELATIONS BETWEEN UTILITY**
2 **STOCKS AND THE MARKET IMPLY FOR THE INVESTOR-**
3 **REQUIRED RETURN?**

4 A. A direct consequence of stronger correlations is higher Beta coefficients. For
5 example, I assessed the correlation of the changes in prices in the XLU with the
6 changes in prices of the S&P 500 to determine whether there was any relationship
7 between the two during the current crisis. As shown in Chart 5 below, as the
8 threat from COVID-19 became apparent, the correlation between the price
9 changes of the XLU and the price changes of the S&P 500 increased from near
10 0.25 to near 0.75 (using a two-year correlation, consistent with Bloomberg's
11 calculation of Beta coefficients) and from near 0.25 to near 0.59 (using a five-year
12 correlation, consistent with *Value Line*'s calculation of Beta coefficients) from
13 February 2020 through March 2021.

**Chart 5: Two-Year and Five-Year Correlation Coefficients for the XLU
Relative to the S&P 500²⁵**



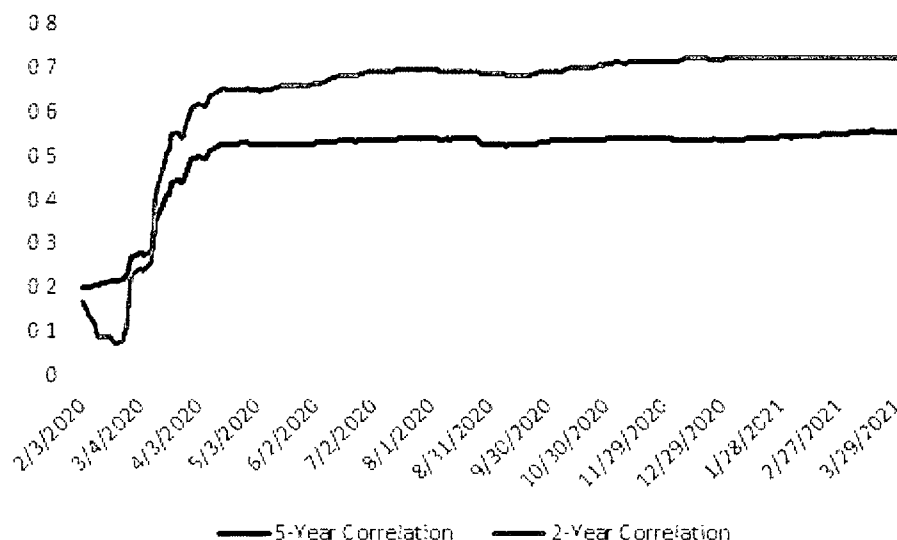
To further the point, I have calculated two-year²⁶ and five-year²⁷ correlation coefficients between the price changes in the S&P 500 and price changes in the Combined Proxy Group from February 2020 through March 2021. As shown on Chart 6, the correlation coefficients increased from under 0.10 to approximately 0.72 (two-year horizon) and from under 0.20 to approximately 0.55 (five-year horizon).

²⁵ Source: S&P Global Market Intelligence.

²⁶ Consistent with the calculation horizon of Bloomberg's Beta coefficients.

²⁷ Consistent with the calculation horizon of Value Line's Beta coefficients.

Chart 6: Two-Year and Five-Year Correlation Coefficients for the Combined Proxy Group Relative to the S&P 500²⁸



The increase in volatility (*i.e.*, risk), as explained above, in combination with the increased correlation between the utility stocks and market indices, ultimately leads to higher Beta coefficients and higher investor-required returns for utilities.

Q. MR. GORMAN REFERS TO SEVERAL RECENT REPORTS BY S&P AND MOODY'S CONCLUDING THAT THE CURRENT OUTLOOK FOR REGULATED UTILITIES IS STABLE.²⁹ DO YOU AGREE?

A. No, I do not. Although Mr. Gorman's review of recent articles from S&P and Moody's seems to suggest that the outlook for regulated utilities is stable, a closer look reveals that not to be the case. For example, in January of this year S&P noted:

Many rate case filings were delayed, rate case orders often took longer than expected, and many orders were below expectations.

²⁸ Source: S&P Global Market Intelligence.
²⁹ Gorman Direct Testimony, at 19-21.

During the year, the utility industry performed poorly from a credit quality perspective. The negative outlooks or CreditWatch negative listings doubled and downgrades outpaced upgrades for the first time in a decade by about 7 to 1.³⁰

Clearly, the outlook for regulated utilities is less stable than Mr. Gorman assumes.

Q. MR. GORMAN APPEARS TO LINK THE STABLE OUTLOOK FOR REGULATED UTILITIES TO INCREASED LEVELS OF CAPITAL EXPENDITURES.³¹ PLEASE COMMENT.

A. Mr. Gorman's primary point is that the levels of capital expenditures are "profit-driven capital investments" and "are embraced by the capital markets," to which regulatory commissions must take into consideration in setting rates of return.³² Once again, Mr. Gorman takes a singular view of the issue. First, as noted above, the outlook for regulated utilities was not as robust as Mr. Gorman contends. Second, the financial community carefully monitors the current and expected financial conditions of utility companies, as well as the regulatory environment in which those companies operate. In that respect, the regulatory environment is one of the most important factors considered in both debt and equity investors' assessments of risk. That is especially important during periods in which the utility expects to make significant capital investments and, therefore, may require access to capital markets.

³⁰ S&P Global Ratings, RatingsDirect, *North American Regulated Utilities' Negative Outlook Could See Modest Improvement*, January 20, 2021, at 1.

³¹ Gorman Direct Testimony, at 8-9.

³² Gorman Direct Testimony, at 9

1 **Q. DO CREDIT RATING AGENCIES RECOGNIZE RISK ASSOCIATED**
2 **WITH INCREASED CAPITAL EXPENDITURES?**

3 A. Yes, they do. From a credit perspective, the additional pressure on cash flows
4 associated with high levels of capital expenditures exerts corresponding pressure
5 on credit metrics and, therefore, credit ratings. S&P has noted several long-term
6 challenges for utilities' financial health including: heavy construction programs to
7 address demand growth; declining capacity margins; and aging infrastructure and
8 regulatory responsiveness to mounting requests for rate increases.³³ More
9 recently, S&P noted:

10 We assume that capital spending will remain a focus of most utility
11 managements and strain credit metrics. It provides growth when
12 sales are diminished by ongoing demanded efficiency from
13 regulators and other trends, and it is welcomed by policymakers
14 that appreciate the economic stimulus and the benefits of safer,
15 more reliable service. The speed with which the regulatory process
16 turns the new spending into higher rates to begin to pay for it is an
17 important factor in our assumptions and the forecast. Any extended
18 lag between spending and recovery can exacerbate the negative
19 effect on credit metrics and therefore ratings.³⁴

20 The rating agency views noted above also are consistent with certain
21 observations: (1) the benefits of maintaining a strong financial profile are
22 significant when capital access is required and become particularly acute during
23 periods of market instability; and (2) the Commission's decision in this
24 proceeding will have a direct bearing on the Company's credit profile and its
25 ability to access the capital needed to fund its investments.

³³ Standard & Poor's, *Industry Report Card: Utility Sectors in the Americas Remain Stable, While Challenges Beset European, Australian, and New Zealand Counterparts*, RatingsDirect, June 27, 2008, at 4.

³⁴ Standard & Poor's, *Industry Top Trends 2017: Utilities*, RatingsDirect, February 16, 2017, at 4.

1 **Q. DR. WOOLRIDGE AND MS. PERRY BOTH LOOK TO RECENTLY**
2 **AUTHORIZED RETURNS SPECIFICALLY WITHIN TEXAS. PLEASE**
3 **COMMENT ON THEIR RESPECTIVE REVIEWS.**

4 A. The primary issue with Dr. Woolridge's and Ms. Perry's analysis is that while
5 authorized ROEs may be reasonable benchmarks of acceptable ROEs in more
6 normal economic conditions, they understate the investor-required return in the
7 current unstable economic environment. The reason why historical authorized
8 returns understate the investor-required return in volatile markets is because
9 authorized ROEs are a lagging indicator of investor-required returns; *i.e.*,
10 authorized ROEs are based on market data presented in an evidentiary record,
11 which spans a period before the decision, sometimes lasting over a year in some
12 cases. When markets are disjointed, as they are now, historical authorized returns
13 do not completely reflect the investor required return because the economic
14 conditions in the past are not representative of economic conditions now.

15 **Q. HAVE YOU GENERALLY REVIEWED THE CAPITAL MARKET**
16 **CONDITIONS THAT OCCURRED DURING PREVIOUS PROCEEDINGS**
17 **VERSUS THOSE THAT HAVE OCCURRED DURING THE COURSE OF**
18 **THIS PROCEEDING?**

19 A. Yes, I have. Although Dr. Woolridge and Ms. Perry both refer to several recently
20 authorized returns, I will focus on the capital market conditions from the
21 Company's most recently completed proceeding, Docket No. 46449, and those
22 throughout the pendency of the instant proceeding. I have elected to specifically
23 rely on the Company's previous proceeding because that represents the only
24 electric authorized ROE that was fully litigated within the last five years. As

1 shown in Table 7 below, several measures of risk have increased since the
2 Company's last case.

3 **Table 7: Comparative Risk Measures: Docket No. 46449 and Present**
4 **Docket³⁵**

Measure	Docket No. 46449	Present Docket
VIX	11.18	24.23
Coefficient of Variation – 30 Year Treasury Yield	2.12%	5.05%
Coefficient of Variation – Moody's A2- rated utility bonds	1.49%	3.04%
Dr. Woolridge's Electric Proxy Group Annualized Volatility	13.05%	24.96%
Dr. Woolridge's Electric Proxy Group Average Beta Coefficient	0.69	0.87

5 I note that in looking to the returns authorized by the Commission in 2020,
6 the most recent being Docket No. 49831 in August, the rebuttal testimony in that
7 case was filed March 11, 2020. The 30-day average of the VIX at that point was
8 25.44. The 30-day average of the VIX for the 30 days beginning March 12, 2020
9 was 54.44. Even though Docket No. 49831 ultimately settled, the extent to which
10 COVID-19 would have been reflected in the proceeding would not have fully
11 reflected the totality of the economic and financial impact that subsequently
12 occurred.

13 **Q. PLEASE SUMMARIZE YOUR CONCLUSION REGARDING THE**
14 **CURRENT CAPITAL MARKETS.**

15 **A.** There is no doubt that much of the last 12 months is characterized by extreme

³⁵ Sources: Bloomberg Professional, *Value Line*. Average CoVs and annualized volatilities based on duration of proceedings for Docket No. 46449 (December 16, 2016-December 14, 2017) and for Present Docket (October 14, 2020-March 31, 2021). Ms. Perry does not present a comparable risk proxy group.

1 volatility, both in the equity and debt markets.³⁶ Looking to the longer-term, it is
2 evident that investors are anticipating growth, but are still concerned that the
3 growth may fail to meet their required returns, especially for utilities.

4 While the Opposing Witnesses solely focus on historically low interest
5 rates, they ignore other risk drivers that affect the investor-required return. When
6 those drivers of risk are viewed in their entirety as demonstrated above, it is quite
7 clear that investor-required returns on utility stocks are increasing.

8 **IV. RESPONSE TO STAFF WITNESS FILAROWICZ**

9 **Q. PLEASE SUMMARIZE STAFF'S ROE RECOMMENDATIONS AS THEY**
10 **RELATE TO THE COMPANY'S COST OF CAPITAL.**

11 A. Mr. Filarowicz applies single stage and multi-stage DCF models, an RPM, and a
12 CAPM to a proxy group of 20 electric utilities. The results of these models are
13 summarized in Table 8, below. From these results, Mr. Filarowicz recommends
14 an ROE range of 9.05% to 9.35%, with a point estimate at the upper end of his
15 range of 9.35%.³⁷

16 **Table 8: Summary of Mr. Filarowicz's ROE Results³⁸**

Model	ROE Range	Point Estimate
Combined DCF	6.59%-12.00%	9.35%
Risk Premium	N/A	9.05%
CAPM	6.37%-8.51%	Excluded

³⁶ D'Ascendis Direct Testimony, at 8-9.

³⁷ Filarowicz Direct Testimony, at 8.

³⁸ *Ibid.*, Attachment MF-9.

1 As can be seen in Table 8, his recommended range of ROEs is derived
2 from his DCF model and RPM results. The CAPM analysis was excluded from
3 Mr. Filarowicz's ROE estimates.³⁹

4 **Q. IN WHAT KEY AREAS ARE MR. FILAROWICZ'S ANALYSES AND**
5 **RECOMMENDATIONS INCORRECT OR UNSUPPORTED?**

6 A. There are several areas including:

- 7 1. His selection criteria for his proxy group;
- 8 2. His application of the RPM;
- 9 3. His application of the CAPM;
- 10 4. His exclusion of a size adjustment;
- 11 5. His exclusion of a credit risk adjustment; and
- 12 6. Certain of his recommendations related to ring-fencing measures.

13 **A. Proxy Group Selection**

14 **Q. PLEASE SUMMARIZE THE PROCESS BY WHICH MR. FILAROWICZ**
15 **SELECTED HIS PROXY GROUP.**

16 A. Mr. Filarowicz developed his proxy group of 20 companies by applying the
17 following criteria:

- 18 • Proxy companies are covered by *Value Line* and classified as an electric
19 company;
- 20 • Proxy companies have a current capital structure with a long-term debt
21 proportion between 40% and 60%;
- 22 • Proxy companies have positive (greater than zero) long-term earnings

³⁹ *Ibid.*, at 25.

- 1 growth rate forecasts from *Value Line* and Zacks (if a growth rate is
2 available);
- 3 • Proxy companies are covered by S&P; have an investment grade credit
4 rating; and, if the outlook is negative or if the utility has a negative credit
5 watch, would not lose investment grade rating if downgraded one notch in
6 credit rating;
 - 7 • Proxy companies have not had recent and do not have planned or expected
8 potential merger activities, or other major capital expansion or contraction,
9 and have not had any major, recent extraordinary events that would affect
10 overall financial condition;
 - 11 • Proxy companies have not had recent dividend omissions or cuts; and
 - 12 • Proxy companies are not otherwise considered inappropriate for being a
13 proxy to target the cost of equity for SWEPCO.⁴⁰

14 **Q. DO YOU AGREE WITH MR. FILAROWICZ’S SELECTION CRITERIA**
15 **AND HIS ULTIMATE PROXY GROUP?**

16 A. Not entirely. In my opinion, the final criterion can be subject to interpretation.
17 What one analyst could consider appropriate, another analyst may consider
18 inappropriate. For example, it would be my opinion that Fortis, Inc. is
19 inappropriate for consideration in the proxy group, as it operates primarily in
20 Canada, which has a different regulatory process than in the United States.
21 Another example would be whether the utilities selected are indeed primarily
22 regulated electric utilities. Black Hills Corporation’s (“BKH”) net operating
23 income and total assets are not primarily attributable to its regulated electric

⁴⁰ Filarowicz Direct Testimony, at 13-14.

1 operations. In its 2019 SEC Form 10-K, BKH reported adjusted operating income
2 and assets from its Electric Utilities segment of \$160.297 million and \$2,900.983
3 million, respectively, and total company net operating income and assets of
4 \$406.042 million and \$7,558.457 million, respectively.⁴¹ From these values, one
5 can calculate that BKH's net operating income and assets attributable to regulated
6 electric operations were 39.48% and 38.38% of the company total, respectively.
7 Since SWEPCO is a 100% pure-play electric utility, one could argue that a
8 company that has less than 50% of its net operating income and assets attributable
9 to regulated electric utility operations is not a comparable proxy company.

10 While the difference in proxy group does not result in a material
11 difference between our positions in this proceeding, I would ask Mr. Filarowicz to
12 revisit this criterion in the future.

13 **B. Application of the Discounted Cash Flow Model**

14 **Q. PLEASE SUMMARIZE MR. FILAROWICZ'S METHODOLOGY TO**
15 **CALCULATE HIS COMBINED DCF RESULT.**

16 A. Mr. Filarowicz uses two DCF models in his analysis: a constant growth and a
17 multi-stage DCF model. He averages the point estimate results from these models
18 to calculate his combined DCF point estimate. This is the value that he uses for
19 his ROE Range. These results are summarized in Table 9.

⁴¹ Black Hills Corporation SEC Form 10-K (December 31, 2020) at 48, 98.

1

Table 9: Summary of Mr. Filarowicz's ROE Results⁴²

Model	ROE Range	Point Estimate
Single Stage DCF (Constant Growth)	6.59%-12.00%	9.38%
Multi-Stage DCF	<u>7.26%-9.99%</u>	<u>9.31%</u>
Combined DCF	6.59%-12.00%	9.35%

2 **Q. PLEASE SUMMARIZE MR. FILAROWICZ'S CONSTANT GROWTH**
3 **DCF MODEL.**

4 A. Mr. Filarowicz's constant growth DCF model applies an average of weekly prices
5 over the 12 weeks ending February 8, 2021 and projected long-term earnings
6 growth rates from *Value Line* and Zacks.⁴³ In calculating the expected dividend
7 yield, Mr. Filarowicz projects the next four quarterly dividends, growing the
8 dividend by his projected long-term earnings growth rate in the quarter in which
9 each company has generally increased its dividend.⁴⁴

10 **Q. PLEASE SUMMARIZE MR. FILAROWICZ'S MULTI-STAGE DCF**
11 **MODEL.**

12 A. Mr. Filarowicz's multi-stage DCF model calculates the Internal Rate of Return
13 ("IRR") that sets the current stock price equal to the present value of projected
14 dividends.⁴⁵ The fundamental difference between Mr. Filarowicz's constant
15 growth and multi-stage DCF models is that the former assumes a constant growth
16 rate in perpetuity, whereas the latter allows for a change from the first stage
17 growth (years one through five) to a long-term growth rate (years six through

⁴² Filarowicz Direct Testimony, Attachment MF-9.

⁴³ *Ibid.*, at 16, 19; Attachment MF-3.

⁴⁴ *Ibid.*, at 15-17

⁴⁵ The Internal Rate of Return is the resulting ROE estimate.

1 perpetuity).⁴⁶ As with his constant growth DCF model, the first stage of Mr.
2 Filarowicz's multi-stage DCF model relies on analyst earnings projections from
3 Zacks and *Value Line* as the relevant measures of growth. The second, or
4 terminal, stage assumes long-term growth measured by expected growth in
5 nominal Gross Domestic Product ("GDP").⁴⁷ Mr. Filarowicz's terminal growth
6 rate of 5.13% is similar to his average projected earnings per share ("EPS")
7 growth rate used in his constant growth DCF model of 5.22%.⁴⁸

8 **Q. DO YOU AGREE WITH MR. FILAROWICZ'S COMBINED DCF MODEL**
9 **RESULTS?**

10 A. While I disagree with the applicability of the multi-stage DCF model to utility
11 companies, as discussed in detail below regarding Mr. Gorman's analysis, Mr.
12 Filarowicz's indicated ROE using the DCF model of 9.35% is comparable to my
13 updated DCF model result of 9.32%.

14 **C. Application of the Risk Premium Model**

15 **Q. PLEASE SUMMARIZE MR. FILAROWICZ'S RPM.**

16 A. Mr. Filarowicz's RPM explores the relationship between average allowed equity
17 returns for electric utility companies published by Regulatory Research
18 Associates, Inc. and annual average Moody's Baa-rated corporate bond yields.
19 Using annual data from the years 1980 through 2020, Mr. Filarowicz conducts a
20 regression analysis, which he then combines with recent monthly yields on

⁴⁶ Mr. Filarowicz's DCF analyses project dividends for a 150-year period, which is generally consistent with a perpetual dividend assumption; Filarowicz Direct Testimony, at 18.

⁴⁷ Filarowicz Direct Testimony, at 18.

⁴⁸ *Ibid.*, at Attachments MF-2 and MF-6, respectively.

1 Moody's Baa-rated corporate bonds to develop his equity risk premium ("ERP")
2 estimate of 5.49% and a corresponding ROE of 9.05%.⁴⁹

3 **Q. PLEASE COMMENT ON MR. FILAROWICZ'S APPLICATION OF THE**
4 **RPM.**

5 A. As a preliminary matter, I agree with Mr. Filarowicz's reliance on empirical
6 studies that demonstrate that ERPs vary over time and that there is an inverse
7 relationship between the level of interest rates and the ERP.⁵⁰

8 That being said, I have a few concerns with Mr. Filarowicz's application
9 of the RPM. The first concern is that it is inappropriate to use current interest
10 rates to determine an expected ROE. Using current measures, like interest rates,
11 is inappropriate for cost of capital and ratemaking purposes because both cost of
12 capital and ratemaking are prospective in nature. The cost of capital, including
13 the cost rate of common equity, is expectational in that it reflects investors'
14 expectations of future capital markets, including an expectation of interest rate
15 levels, as well as future risks. Ratemaking is also prospective in that the rates set
16 in this proceeding will be in effect for a period in the future. Mr. Filarowicz
17 agrees with using projected measures in a cost of capital analysis, specifically the
18 use of projected analyst growth rates in EPS in the DCF model, as he explains on
19 page 20 of his direct testimony: "There are several reasons why I use professional
20 security analysts' forecasts instead of historical data. First, the ROE is a forward-
21 looking concept, and security analysts use extensive and sophisticated financial
22 models to forecast growth rates."

⁴⁹ *Ibid.*, at 22-25.

⁵⁰ *Ibid.*, at 22-23.

1 As mentioned above, even though Mr. Filarowicz relies, in part, on
2 projected growth rates in his DCF analyses, noting that growth in the DCF is
3 expected,⁵¹ he fails to apply that logic to selecting an appropriate interest rate in
4 his RPM analysis. Using projected interest rates in his RPM analysis would be
5 consistent with his above statement and his application of his DCF model.

6 My second concern is regarding the use of annual authorized returns and
7 Moody's bond yields. It is preferable to use the authorized returns and
8 prospective Moody's bond yields on an individual basis. One reason why one
9 should use individual cases instead of an annual average is that some years have
10 more rate case decisions than others, and years with less rate case decisions will
11 garner unnecessary weight. Another reason to use individual cases over an annual
12 average is that interest rates and market conditions change during the year (*e.g.* the
13 beginning and end of 2020), if one uses annual average authorized returns and
14 annual average interest rates, the fluctuation between the interest rates and ERPs
15 during the year are lost.

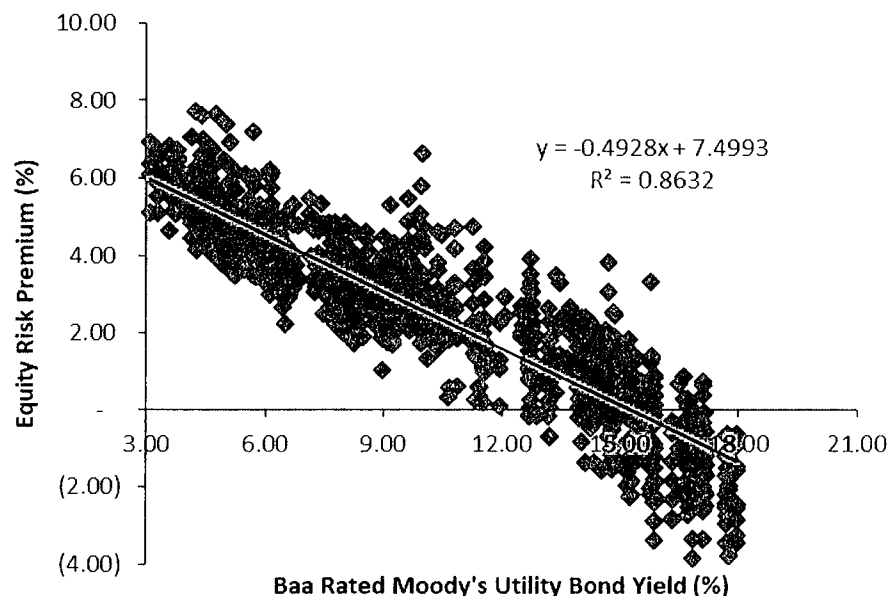
16 Third and finally, it is more appropriate to use Moody's Baa-rated public
17 utility bond yields rather than Moody's Baa corporate bond yields for both the
18 regression and the return on equity computation, which I have done in my
19 corrected analysis as described below.

⁵¹ *Ibid.*, at 16.

1 Q. WHAT IS THE CORRECTED RESULT OF THE RPM AFTER
2 REFLECTING A PROSPECTIVE MOODY'S BAA-RATED PUBLIC
3 UTILITY BOND YIELD AND USING INDIVIDUAL RATE CASE DATA
4 IN PLACE OF AVERAGE ANNUAL RATE CASE DATA?

5 A. As shown on Schedule DWD-3R and Chart 7, below, a scatter plot of the
6 individual rate case data underlying Attachment MF-7 shows the inverse
7 relationship of the ERP relative to the yields on Moody's Baa-rated public utility
8 bonds immediately prior to the issuance of each regulatory decision.⁵²

9 **Chart 7: Individual Rate Case Data: Electric Utilities 1980-2020**



10 I determined the appropriate prospective Moody's Baa-rated public utility
11 yield by relying on a consensus forecast of about 50 economists of the expected
12 yield on Moody's Baa-rated corporate bonds for the six calendar quarters ending
13 with the second calendar quarter of 2022, and *Blue Chip's* long-term projections

⁵² If the Order was in the first half of the month, the Moody's Baa-rated utility bond from two months prior would be used. If the Order was in the second half of the month, the Moody's Baa-rated public utility bond from the prior month was used.

1 for 2022 to 2026, and 2027 to 2031.⁵³ The average expected yield on Moody's
2 Baa-rated corporate bonds is 4.11%. I then derived an expected yield on Moody's
3 Baa-rated public utility bonds by making a downward adjustment of 0.07%, which
4 represents a recent spread between Moody's Baa-rated corporate bonds and
5 Moody's Baa-rated public utility bonds. Subtracting the recent 0.07% spread
6 from the expected Moody's Baa2-rated corporate bond yield of 4.11% results in
7 an expected Moody's Baa2-rated public utility bond yield of 4.04%.

8 The projected Baa2-rated utility bond yield of 4.04% produces a projected
9 ERP of 5.51%. Correcting the inputs to Mr. Filarowicz's RPM analysis results in
10 an indicated ROE of 9.55%.

11 **D. Application of the Capital Asset Pricing Model**

12 **Q. DO YOU HAVE ANY COMMENTS ON MR. FILAROWICZ'S CAPM**
13 **RESULTS?**

14 A. Yes. Mr. Filarowicz's indicated average return on common equity using the
15 CAPM of 7.26% is unreasonable on its face. Mr. Filarowicz also recognizes this
16 fact and does not directly consider his CAPM results in the determination of his
17 final cost of common equity range.⁵⁴ I would argue that the inputs used in his
18 application of the CAPM are the driving factors for the unreasonableness of his
19 CAPM results.

⁵³ *Blue Chip Financial Forecasts*, December 1, 2020 & March 31, 2021.

⁵⁴ Filarowicz Direct Testimony, at 25.

1 **Q. WHICH INPUTS OF MR. FILAROWICZ’S CAPM ANALYSIS ARE**
2 **FLAWED?**

3 A. Mr. Filarowicz’s CAPM analysis is flawed in at least three respects. First, he has
4 incorrectly relied on a historical, *i.e.*, recent, 20-year Treasury bond yield as his
5 risk-free rate.⁵⁵ Second, he incorrectly calculated the Market Risk Premium
6 (“MRP”) by using the total return on long-term government bonds in his
7 calculation. Third, Mr. Filarowicz did not incorporate an empirical CAPM
8 (“ECAPM”) analysis even though empirical evidence indicates that low-beta
9 securities, such as utilities, earn returns higher than the CAPM predicts and high-
10 beta securities earn less. As I already addressed, it is reasonable and appropriate
11 to rely on projected interest rates in a cost of capital analysis. As such, I will not
12 address it again here.

13 **Q. WHY IS MR. FILAROWICZ’S USE OF 20-YEAR U.S. TREASURY**
14 **BONDS INAPPROPRIATE FOR COST OF CAPITAL PURPOSES?**

15 A. Mr. Filarowicz’s use of 20-year U.S. Treasury bonds is inappropriate for cost of
16 capital purposes because, as discussed below, the tenor of the risk-free rate used in
17 the CAPM should match the life (or duration) of the underlying investment. As
18 noted by Morningstar:

19 The traditional thinking regarding the time horizon of the chosen
20 Treasury security is that it should match the time horizon of
21 whatever is being valued. When valuing a business that is being
22 treated as a going concern, the appropriate Treasury yield should be
23 that of a long-term Treasury bond. Note that the horizon is a
24 function of the investment, not the investor. If an investor plans to
25 hold stock in a company for only five years, the yield on a five-year
26 Treasury note would not be appropriate since the company will

⁵⁵ Attachment MF-8.

1 continue to exist beyond those five years.⁵⁶

2 Morin also confirms this when he states:

3 [b]ecause common stock is a long-term investment and because the
4 cash flows to investors in the form of dividends last indefinitely,
5 the yield on very long-term government bonds, namely, the yield
6 on 30-year Treasury bonds, is the best measure of the risk-free rate
7 for use in the CAPM (footnote omitted)... The expected common
8 stock return is based on long-term cash flows, regardless of an
9 individual's holding time period.⁵⁷

10 Pratt and Grabowski recommend a similar approach to selecting the risk-
11 free rate: "In theory, when determining the risk-free rate and the matching ERP
12 you should be matching the risk-free security and the ERP with the period in
13 which the investment cash flows are expected."⁵⁸ As a practical matter, equity
14 securities represent a perpetual claim on cash flows; 30-year Treasury bonds are
15 the longest-maturity securities available to approximate that perpetual claim. The
16 average life of SWEPCO's utility plant is approximately 38 years based on the
17 requested composite depreciation rate of the components of its utility plant.⁵⁹
18 Thus, Mr. Filarowicz's use of a 20-year Treasury bond yield does not match the
19 life of the assets being valued. The use of a 30-year Treasury bond yield is a more
20 appropriate risk-free rate.

21 In view of the above, the appropriate risk-free rate available at the time of
22 the preparation of Mr. Filarowicz's direct testimony is the average of the
23 consensus forecasts of approximately 50 economists from *Blue Chip* for 30-year

⁵⁶ Morningstar, Inc., 2013 Ibbotson Stocks, Bonds, Bills and Inflation Valuation Yearbook, at 44.

⁵⁷ Roger A. Morin, Ph.D., New Regulatory Finance, Public Utility Reports, Inc., 2006, at 151 ("Morin").

⁵⁸ Shannon Pratt and Roger Grabowski, Cost of Capital: Applications and Examples, 3rd Ed. (Hoboken, NJ: John Wiley & Sons, Inc., 2008), at 92.

⁵⁹ Requested depreciation rate of 2.65% equates to a 37.73 year average life. $1 / 2.65\% = 37.73$ years.

1 Treasury bonds for the six quarters ending with the second quarter 2022, from the
2 March 1, 2021 edition, and the long-range consensus forecasts from the December
3 1, 2020 edition for 2022-2026 and 2027-2031, or 2.48%, as derived in note 1 on
4 page 2 of Schedule DWD-4R.⁶⁰

5 **Q. PLEASE COMMENT ON MR. FILAROWICZ'S USE OF THE**
6 **HISTORICAL MEAN TOTAL RETURN AND U.S. LONG-TERM**
7 **GOVERNMENT BONDS.**

8 A. Although relying on Duff & Phelps' historical returns in his CAPM analysis, Mr.
9 Filarowicz ignored their recommendation to rely on the income return and not the
10 total return on U.S. Treasury securities in deriving an MRP. As indicated in Duff
11 and Phelps' 2020 SBBI ® Yearbook Stocks, Bonds, Bills and Inflation® ("SBBI-
12 2020"):

13 Another point to keep in mind when calculating the equity risk
14 premium is that the income return on the appropriate-horizon
15 Treasury security, rather than the total return, is used in the
16 calculation.

17 The total return comprises three return components: the income
18 return, the capital appreciation return, and the reinvestment return.
19 The income return is defined as the portion of the total return that
20 results from a periodic cash flow or, in this case, the bond coupon
21 payment. The capital appreciation return results from the price
22 change of a bond over a specific period. Bond prices generally
23 change in reaction to unexpected fluctuations in yields.
24 Reinvestment return is the return on a given month's investment
25 income when reinvested into the same asset class in the subsequent
26 months of the year. The income return is thus used in the
27 estimation of the equity risk premium because it represents the
28 truly riskless portion of the return.⁶¹

⁶⁰ Both documents would have been available when Mr. Filarowicz conducted his rate of return in March 2021.

⁶¹ SBBI-2020, at 10-22.

1 Also, as shown in SBBI-2020 on page 6-17, the standard deviation for the
2 income return on long-term government bonds is 2.6%, which is the lowest (*i.e.*,
3 least risky) measure of all bond returns followed by SBBI. Mr. Filarowicz's
4 recommended measure of the risk-free rate, the total return on long-term
5 government bonds, has a standard deviation of 9.8%, which is the highest (*i.e.*,
6 most risky) measure of all bond returns followed by SBBI. These measures alone
7 warrant the use of the income return on long-term government bonds as the
8 appropriate proxy of the risk-free rate for use in the calculation of the MRP in a
9 CAPM analysis.

10 In view of the above, the correct derivation of the historical MRP is the
11 difference between the arithmetic mean total return on large company common
12 stocks of 12.10% and the arithmetic mean 1926-2019 income return on long-term
13 government bonds of 5.09%, which results in an MRP of 7.01%.⁶²

14 **Q. ARE THERE FORWARD-LOOKING RISK PREMIUMS THAT WOULD**
15 **BE SUPPORTED BY MR. FILAROWICZ'S DIRECT TESTIMONY?**

16 A. Yes, there are. In addition to the corrected historical MRP of 7.01% based on
17 Duff & Phelps's data, Mr. Filarowicz supports the empirical studies that suggest
18 that there is an inverse relationship between interest rates and ERPs, and he also
19 supports the use of *Value Line* data for cost of capital analyses.⁶³ From this, one
20 could calculate at least three additional MRPs to supplement Mr. Filarowicz's
21 analysis:

⁶² *Ibid*, at 10-21.

⁶³ Filarowicz Direct Testimony, at 19-20.

- 1 1. Using Duff & Phelps's return data, I performed a regression analysis
2 similar to the one Mr. Filarowicz performed for his RPM analysis. Using
3 a projected risk-free rate of 2.48%, an MRP of 9.81% is implied from the
4 regression analysis;
- 5 2. Using *Value Line's* Summary & Index, one could project a three- to five-
6 year projected return on the market. Using the 12 weeks ended March 19,
7 2021 (consistent with the 12-week prices used in Mr. Filarowicz's DCF
8 analysis), a projected market return of 8.50% is indicated. Subtracting the
9 projected risk-free rate of 2.48% from the projected return on the market
10 results in an MRP of 6.02%; and
- 11 3. Using *Value Line* Investment Analyzer, one can calculate a projected
12 return on the market by conducting a market weighted DCF model of the
13 component companies of the S&P 500. As of February 26, 2021, the
14 projected return on the market using *Value Line* data was 14.01%.
15 Subtracting the projected risk-free rate of 2.48% from the projected market
16 return would result in an MRP of 11.53%.
17 Averaging the three additional MRPs with the correct historical arithmetic
18 mean MRP of 7.01% results in an average MRP of 8.59% as shown on page 2 of
19 Schedule DWD-4R.

20 **Q. DOES MR. FILAROWICZ PERFORM AN ECAPM IN HIS ANALYSIS?**

21 A. No. Mr. Filarowicz failed to consider the ECAPM, despite the fact that numerous
22 tests of the CAPM have confirmed the ECAPM's validity by showing that the
23 empirical Security Market Line ("SML") described by the traditional CAPM is not
24 as steeply sloped as the predicted SML. While the results of these tests support

1 the notion that Beta coefficients are related to security returns, the empirical SML
2 described by the CAPM formula is not as steeply sloped as the predicted SML,⁶⁴
3 as discussed on page 42 of my Direct Testimony.

4 **Q. WHAT WOULD THE RESULTS OF MR. FILAROWICZ'S CAPM**
5 **ANALYSIS BE IF CORRECTED TO USE A PROJECTED 30-YEAR**
6 **TREASURY BOND, AN APPROPRIATE MRP, AND EMPLOY THE**
7 **ECAPM AS DISCUSSED ABOVE?**

8 A. Schedule DWD-4R, page 1 presents the results of the correct applications of both
9 the traditional CAPM and the ECAPM for Mr. Filarowicz's proxy group. The
10 average and median traditional CAPM results range from 10.17% to 10.21%, and
11 the average and median ECAPM results range from 10.39% to 10.42%.
12 Averaging the CAPM and ECAPM results in a range of indicated ROEs between
13 10.28% and 10.32%.⁶⁵ In view of those results, Mr. Filarowicz's indicated
14 CAPM result of 7.26% is grossly understated.

15 **E. Filarowicz Corrected Results**

16 **Q. WHAT IS MR. FILAROWICZ'S RANGE OF RESULTS GIVEN YOUR**
17 **CORRECTIONS ABOVE?**

18 A. Mr. Filarowicz's updated ROE range incorporating the corrections to the RPM
19 and CAPM analyses can be seen in Table 10, below.

⁶⁴ Morin, at 175.

⁶⁵ In addition to the corrected historical SBBI-2020 MRP and the MRP generated by the regression analysis of Mr. Filarowicz's S&P 500 earned return results, I also included MRPs generated by using measures of capital appreciation and income returns from *Value Line* for the S&P 500 less projected 30-year treasury bond yields, and using total market returns from *Value Line* Summary & Index less projected 30-year treasury bond yields.

1

Table 10: Summary of Mr. Filarowicz's ROE Results

Model	ROE Range	Point Estimate
Combined DCF	6.59%-12.00%	9.35%
Corrected Risk Premium	N/A	9.55%
Corrected CAPM	10.28%-10.32%	10.30%

2

3

4

5

6

7

As shown above, the corrected indicated range of results for Mr. Filarowicz's ROE models is from 9.35% to 10.30%. However, this indicated range of ROEs, which are derived from the market data of much larger electric utility companies, is not directly applicable to SWEPCO because it does not reflect the greater risk of SWEPCO due to its smaller relative size and riskier bond rating.

8

F. Adjustments to the Cost of Common Equity

9

Q. DOES MR. FILAROWICZ CONSIDER A SIZE ADJUSTMENT IN HIS RECOMMENDED ROE?

10

11

A. No, he does not. Citing articles by Wallace Davidson and Annie Wong to support his position, Mr. Filarowicz concludes that there is no consensus regarding the use of a size premium for utilities or companies in general.⁶⁶

12

13

14

Q. DOES DR. WONG'S STUDY ESTABLISH THAT THERE IS NOT A SIZE EFFECT FOR UTILITIES?

15

16

A. No. Dr. Wong's study is flawed because she attempts to relate a change in size to Beta coefficients, which accounts for only a small percentage of diversifiable

17

⁶⁶

Filarowicz Direct Testimony, at 34.

1 company-specific risk. However, size is company-specific and therefore
2 diversifiable.

3 **Q. IS THERE A PUBLISHED RESPONSE TO DR. WONG'S ARTICLE?**

4 A. Yes, there is. In response to Dr. Wong's article, *The Quarterly Review of*
5 *Economics and Finance* published an article in 2003, authored by Dr. Thomas M.
6 Zepp, which commented on the Wong article cited by Mr. Filarowicz. Relative to
7 Dr. Wong's results, Dr. Zepp concluded in the Abstract on page 1 of his article:
8 "Her weak results, however, do not rule out the possibility of a small firm effect
9 for utilities."⁶⁷ Dr. Zepp also noted on page 582 that: "Two other studies
10 discussed here support a conclusion that smaller water utility stocks are more
11 risky than larger ones. To the extent that water utilities are representative of all
12 utilities, there is support for smaller utilities being more risky than larger ones."⁶⁸

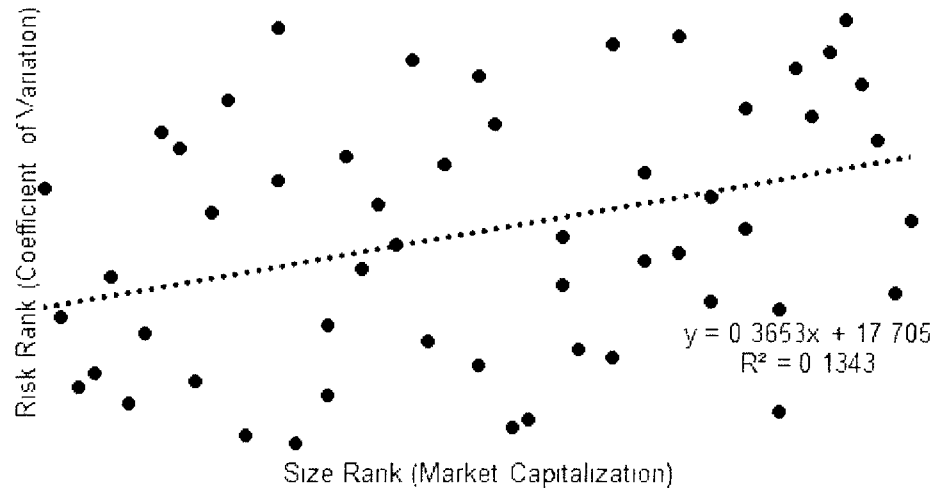
13 **Q. HAVE YOU PERFORMED A STUDY FOR UTILITY COMPANIES THAT**
14 **LINK SIZE AND RISK?**

15 A. Yes, I have. The study included the universe of electric, gas, and water companies
16 included in *Value Line* Standard Edition. From each of the utilities' *Value Line*
17 Ratings & Reports, I calculated the ten-year CoV of net profit (a measure of risk)
18 and current market capitalization (a measure of size) for each company. After
19 ranking the companies by size (largest to smallest) and risk (least risky to most
20 risky), I made a scatter plot of the data, as shown on Chart 8, below:

⁶⁷ Thomas M. Zepp, *Utility Stocks and the Size Effect --- Revisited*, *The Quarterly Review of Economics and Finance*, 43 (2003) at 578-582.

⁶⁸ *Ibid.*, at 578-583.

**Chart 8: Relationship Between Size and Risk
for the *Value Line* Universe of Utility Companies⁶⁹**



As shown in Chart 8 above, as company size decreases (increasing size rank), the CoV increases, linking size and risk for utilities, which is significant at 95.0% confidence level.

Q. ARE YOU AWARE OF ANOTHER ACADEMIC ARTICLE RELATING TO THE APPLICABILITY OF A SIZE PREMIUM?

A. Yes. An article by Michael A. Paschall, ASA, CFA, and George B. Hawkins ASA, CFA, *Do Smaller Companies Warrant a Higher Discount Rate for Risk?* also supports the applicability of a size premium. As the article makes clear, all else equal, size is a risk factor which must be taken into account when setting the cost of capital or capitalization (discount) rate. Paschall and Hawkins state in their conclusion as follows:

The current challenge to traditional thinking about a small stock premium is a very real and potentially troublesome issue. The

⁶⁹ Source: *Value Line*.

1 challenge comes from bright and articulate people and has already
2 been incorporated into some court cases, providing further
3 ammunition for the IRS. Failing to consider the additional risk
4 associated with most smaller companies, however, is to fail to
5 acknowledge reality. Measured properly, small company stocks
6 have proven to be more risky over a long period of time than have
7 larger company stocks. This makes sense due to the various
8 advantages that larger companies have over smaller companies.
9 Investors looking to purchase a riskier company will require a
10 greater return on investment to compensate for that risk. There are
11 numerous other risks affecting a particular company, yet the use of
12 a size premium is one way to quantify the risk associated with
13 smaller companies.⁷⁰

14 Hence, Paschall and Hawkins corroborate the need for a small size
15 adjustment, all else equal.

16 **Q. HAVE YOU CONDUCTED AN ADDITIONAL STUDY COMPARING**
17 **THE SIZE OF SWEPKO WITH THE AVERAGE PROXY COMPANY?**

18 A. Yes, I have. Duff & Phelps' ("D&P") 2020 Cost of Capital: Annual U.S.
19 Guidance and Examples Market Results Through 2019 ("D&P 2020") presents a
20 Size Study based on the relationship of various measures of size and return.
21 Relative to the relationship between average annual return and the various
22 measures of size, D&P state:

23 **The size of a company is one of the most important risk**
24 **elements to consider when developing cost of equity estimates**
25 **for use in valuing a firm.** Traditionally, researchers have used
26 market value of equity (*i.e.*, "market capitalization" or simply
27 "market cap") as a measure of size in conducting historical rate of
28 return research. For example, the Center for Research in Security
29 Prices (CRSP) "deciles" are developed by sorting U.S. companies
30 by market capitalization. Another example is the Fama-French
31 "Small minus Big" (SMB) series, which is the difference in return

⁷⁰ Michael A. Paschall, ASA, CFA and George B. Hawkins ASA, CFA, *Do Smaller Companies Warrant a Higher Discount Rate for Risk?*, CCH Business Valuation Alert, Vol. 1, Issue No. 2, December 1999.

1 of “small” stocks minus “big” (*i.e.*, large) stocks, as defined by
2 market capitalization. (emphasis added)⁷¹

3 Schedule DWD-5R contains indicated small size risk premiums using
4 various measures of size as described by D&P 2020.⁷² The measures are listed
5 below:

- 6 • Market Value of Common Equity;
- 7 • Book Value of Common Equity;
- 8 • Five-Year Average Net Income;
- 9 • Market Value of Invested Capital;
- 10 • Total Assets;
- 11 • Five Year Average EBITDA;
- 12 • Total Sales; and
- 13 • Number of Employees.

14 As shown on Schedule DWD-5R, in all measures, SWEPCO is smaller
15 than Mr. Filarowicz’s average proxy company with associated size premiums
16 ranging from 0.91% to 2.32%.⁷³ In view of these indicated size premiums, an
17 upward size adjustment of 0.20% to the indicated cost of common equity is
18 extremely conservative.

19 **Q. DOES MR. FILAROWICZ CONSIDER A CREDIT RISK ADJUSTMENT**
20 **IN HIS RECOMMENDED ROE?**

21 A. No, he does not. Mr. Filarowicz states that since SWEPCO’s S&P bond rating is
22 higher than the average proxy group company, that an adjustment would be

⁷¹ D&P-2020, at p. 10-2.

⁷² *Ibid.*

⁷³ Considering Mr. Filarowicz’s, Mr. Gorman’s, and Dr. Woolridge’s proxy groups.

1 unnecessary. In addition, he does not think that the Commission should reward
2 less creditworthy companies with higher ROEs.⁷⁴

3 **Q. HAVE YOU MODIFIED YOUR CREDIT RISK ADJUSTMENT TO**
4 **REFLECT BOTH MOODY'S AND S&P'S BOND RATINGS OF SWEPCO**
5 **COMPARED TO YOUR PROXY GROUPS?**

6 A. Yes, I have. SWEPCO's Moody's bond rating is Baa2, or two credit rating
7 notches lower than the average Moody's bond rating of my Utility Proxy Group
8 (A3) and SWEPCO's S&P bond rating is A-, one notch above the average rating
9 of the Utility Proxy Group (BBB+). Since SWEPCO is net one credit rating notch
10 lower, I adjusted my indicated range of ROEs by one-third of a recent spread
11 between A2 and Baa2 Moody's utility bond yields instead of the two-thirds spread
12 I used in my Direct Testimony.

13 **Q. DO YOU AGREE THAT IF THE COMMISSION ALLOWS A CREDIT**
14 **RISK ADJUSTMENT, THE COMMISSION IS "REWARDING" A LESS**
15 **CREDITWORTHY COMPANY?**

16 A. No, I don't. If a company's relative risk is higher or lower than the comparable
17 proxy group's risk, the allowed return should reflect that relative risk. If the
18 Commission does not recognize the difference in risk between a company and its
19 comparable group, the ROE awarded to that company would not reflect its risk,
20 and in turn, the investor-required return.

⁷⁴ Filarowicz Direct Testimony, at 36-37.

1 **Q. ALONG THOSE LINES, DO YOU AGREE WITH MR. POOLE’S**
2 **RECOMMENDATION TO REDUCE THE ROE BY \$1.13 MILLION**
3 **BASED ON COMPANY PERFORMANCE?**⁷⁵

4 A. No, I do not. Based on the rebuttal testimony of Company Witness Boezio, Mr.
5 Poole’s ROE adjustment is not justified and should be rejected by the
6 Commission.

7 **G. Ring-Fencing**

8 **Q. HAVE YOU REVIEWED MR. FILAROWICZ’S RECOMMENDED RING-**
9 **FENCING MECHANISMS TO ESTABLISH AND MAINTAIN**
10 **SEPERATION BETWEEN SWEPCO, ITS PARENT COMPANY, AND**
11 **AFFILIATE COMPANIES?**

12 A. Yes, I have.

13 **Q. DO YOU HAVE ANY GENERAL COMMENTS ON MR. FILAROWICZ’S**
14 **RECOMMENDATIONS?**

15 A. Yes, I do. In general, I agree with Company Witness Hawkins’ position that the
16 restrictions suggested in Mr. Filarowicz’s direct testimony are unnecessarily
17 costly to SWEPCO customers, as the Company is already complying with the
18 Texas affiliate rules. While Ms. Hawkins will address Mr. Filarowicz’s ring-
19 fencing recommendations in detail, I wanted to discuss two of the mechanisms
20 requested from an investor viewpoint:

- 21 • Recommendation 1 states that SWEPCO will work to ensure that its credit
22 ratings remain at or above its existing rating. I think that this

⁷⁵ Poole Direct Testimony, at 11.

1 recommendation is not necessary because it is already inferred. As
2 addressed in *Bluefield*, which is cited by Mr. Filarowicz: “the return...
3 should be adequate, under efficient and economical management, to
4 maintain its [the utility’s] credit and enable it to raise the money necessary
5 for the proper discharge of its public duties.”⁷⁶ While Mr. Filarowicz
6 specifies the Company should work alone to ensure its credit ratings are
7 maintained, in actuality, the Commission and the Company must work
8 together to maintain the Company’s credit ratings.

- 9 • Recommendation 3 states that if SWEPCO’s credit ratings fall below
10 investment grade, the Company will not use its below-investment-grade
11 ratings as a justification in favor of a higher regulatory ROE. I disagree
12 with this recommendation. As mentioned above, ROE is related to risk.
13 Limiting the Company’s ability to seek a higher ROE that corresponds to
14 increased risk is not reflective of the investor required return.

15 **V. RESPONSE TO TIEC WITNESS GORMAN**

16 **Q. PLEASE PROVIDE A SUMMARY OF MR. GORMAN’S ANALYSES AND**
17 **CONCLUSIONS REGARDING THE COMPANY’S ROE.**

18 A. Mr. Gorman applies three DCF models (constant growth, sustainable growth, and
19 multi-stage) and a CAPM analysis to a proxy group of 13 electric utility
20 companies. Mr. Gorman also performs two RPM analyses, one using the
21 difference between regulatory commission authorized ROEs for utility companies
22 and 30-year Treasury yields, and one using the difference between regulatory

⁷⁶ *Bluefield*, at 693.

commission authorized ROEs and A-rated Moody's public utility bond yields.

Tables 11a through 11c, below, summarize Mr. Gorman's analytical results:

Table 11a: Summary of Mr. Gorman's DCF Model Results⁷⁷

Model	Electric Group Average / Median	Indicated ROE
Constant Growth DCF	9.43%/9.35%	8.90%-9.35%; 8.90% Recommendation.
Sustainable Growth DCF	8.44%/8.45%	
Multi-Stage DCF	8.56%/8.72%	

Table 11b: Summary of Mr. Gorman's RPM Results⁷⁸

Model	Risk-Free Rate	Utility Bond Yield	Indicated ROE
Risk Premium	9.42%	8.98%	9.20%

Table 11c: Summary of Mr. Gorman's CAPM Model Results⁷⁹

Model	Electric Group High MRP/Low MRP	Indicated ROE
CAPM	10.24%/8.65%	9.50%

From these results, Mr. Gorman recommends an indicated range of ROEs from 8.90% to 9.35%. Within that range, he recommends a point estimate of 9.15% as an appropriate measure of ROE applicable to SWEPCO, asserting it

⁷⁷ Gorman Direct Testimony, at 54 and Exhibits MPG-5, MPG-8, and MPG-10.

⁷⁸ *Ibid.*, at 47 and 54.

⁷⁹ *Ibid.*, at 53-54.

1 reflects observable market evidence.⁸⁰ Mr. Gorman accepts SWEPCO's proposed
2 capital structure of 50.63% common equity and 49.37% long-term debt.⁸¹

3 **Q. IN WHAT KEY AREAS ARE MR. GORMAN'S ANALYSES AND**
4 **RECOMMENDATIONS INCORRECT OR UNSUPPORTED?**

5 A. There are several areas including:

- 6 1. His interpretation of the "trend" of authorized ROEs allowed by regulatory
7 commissions;
- 8 2. His application of the DCF model;
- 9 3. His application of the RPM;
- 10 4. His application of the CAPM;
- 11 5. His analysis of the Company's financial integrity; and
- 12 6. His exclusion of size and credit risk adjustments;

13 **A. Trends in Authorized Returns**

14 **Q. PLEASE SUMMARIZE THE ANNUAL AVERAGE AUTHORIZED**
15 **RETURNS DISCUSSED ON PAGES 7 AND 8 OF MR. GORMAN'S**
16 **DIRECT TESTIMONY.**

17 A. Mr. Gorman reviews annual average authorized returns for natural gas and
18 electric utilities from 2006 to 2020, concluding that "returns on equity for both
19 electric and gas utilities have declined over the last several years and have been
20 reasonably stable around the mid 9% range for both electric and gas regulated
21 utilities."⁸²

⁸⁰ *Ibid.*, at 5.

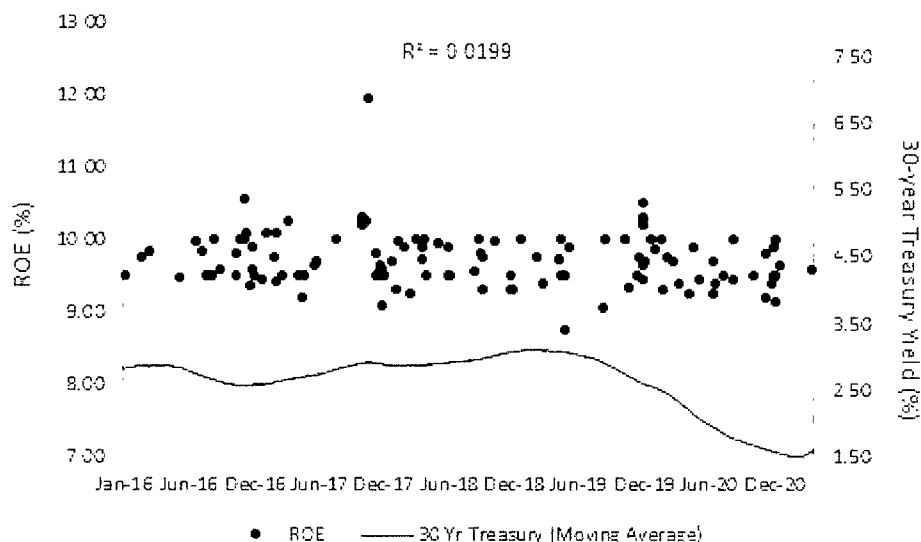
⁸¹ *Ibid.*, at 23.

⁸² Gorman Direct Testimony, at 7.

1 **Q. DO YOU HAVE ANY CONCERNS REGARDING THE USE OF ANNUAL**
2 **AVERAGE RETURNS FOR THESE TYPES OF OBSERVATIONS?**

3 A. Yes, I do. Average annual data obscures variations in returns and does not
4 address the number of cases nor the jurisdiction issuing orders within a given
5 year. For example, one year may have fewer cases decided, and a relatively large
6 portion of those cases decided by a single jurisdiction. As shown in Chart 9,
7 below, if all individual ROEs are charted, rather than annual averages, there is no
8 meaningful trend since 2016. Rather, time explains less than one percent of the
9 change in ROEs, and the trend variable is statistically insignificant. Mr.
10 Gorman's reference to the trend in annual averages inaccurately suggests that
11 authorized returns have trended downward when they have not. Further,
12 authorized returns have remained stable, even as Treasuries have declined.

Chart 9: Authorized Returns for Gas and Electric Utilities (2016-2021)⁸³



Mr. Gorman’s observation regarding the “trend” of authorized ROEs should be dismissed, because, as shown on Chart 9 above, no “trend” exists.

Q. ARE HISTORICAL AUTHORIZED ROES IN OTHER REGULATORY JURISDICTIONS REASONABLE BENCHMARKS FOR THE ROE FOR SWEPCO AT THIS TIME?

A. No. As mentioned previously when discussing Texas-specific authorized ROEs, while authorized ROEs from other jurisdictions may be reasonable benchmarks of acceptable ROEs in more normal economic conditions, they understate the investor-required return in the current unstable economic environment.

⁸³ Source: Regulatory Research Associates. Excludes limited issue rate riders. Based on data through March 31, 2021. Note that the 30-year Treasury yield is based on a backwards-looking moving average that incorporates the previous 252 trading days (approximately one calendar year).

1 **B. Application of the Discounted Cash Flow Model**

2 **Q. PLEASE SUMMARIZE STAFF WITNESS GORMAN’S DCF ANALYSES.**

3 A. Mr. Gorman uses three DCF models, a constant growth model using consensus
4 analyst forecasts, a constant growth model using sustainable growth rates, and a
5 multi-stage DCF, each of which use price data for the 13-week period ending
6 February 26, 2021.⁸⁴

7 **Table 12: Summary of Mr. Gorman’s DCF Results⁸⁵**

	Electric Proxy Group	
	Average	Median
Constant Growth DCF (Analysts’ Growth)	9.43%	9.35%
Constant Growth DCF (Sustainable Growth)	8.44%	8.45%
Multi-Stage Growth DCF	8.56%	8.72%

8 From these results, Mr. Gorman concludes that the indicated range of DCF
9 model results is from 8.45% to 9.35%, choosing 8.90% as his indicated DCF cost
10 rate.⁸⁶

11 **Q. WHAT CONCERNS DO YOU HAVE WITH MR. GORMAN’S DCF**
12 **MODEL ANALYSES?**

13 A. I disagree with Mr. Gorman’s use of sustainable growth rates in the DCF. I also
14 disagree with the applicability of the multi-stage DCF model to utility companies.

15 **Q. WHY DO YOU DISAGREE WITH MR. GORMAN'S SUSTAINABLE**
16 **GROWTH DCF MODEL?**

17 A. Morin discusses the sustainable growth model and shows that it relies on
18 knowledge of several factors, including:

⁸⁴ Gorman Direct Testimony, at 28.
⁸⁵ *Ibid.*, at 30, 32, and 38.
⁸⁶ *Ibid.*, at 40.

- “b”: the fraction of earnings per share retained;
- “r”: the rate of return on equity (ROE);
- “s”: the growth rate in common equity due to the sale of stock; and
- “v”: the fraction of a stock sale that increases existing book value.

Specifically, Morin, states the following:

There are three problems in the practical application of the sustainable growth method. The first is that it may be even more difficult to estimate what b, r, s and v investors have in mind than it is to estimate what g they envisage. It would appear far more economical and expeditious to use available growth forecasts and obtain g directly instead of relying on four individual forecasts of the determinants of such growth. *It seems only logical that the measurement and forecasting errors inherent in using four different variables to predict growth far exceed the forecasting error inherent in the direct forecast of growth itself.*

Second, there is a potential element of circularity in estimating g by a forecast of b and ROE for the utility being regulated, since ROE is determined in large part by regulation. To estimate what ROE resides in the minds of investors is equivalent to estimating the market's assessment of the outcome of regulatory hearings. Expected ROE is exactly what regulatory commissions set in determining an allowed rate of return. In other words, the method requires an estimate of return on equity before it can even be implemented. Common sense would dictate the inconsistency of a return on equity recommendation that is different than the expected ROE that the method assumes the utility will earn forever. For example, using an expected return on equity of 11% to determine the growth rate and using the growth rate to recommend a return on equity of 9% is inconsistent. It is not reasonable to assume that this regulatory utility company is expected to earn 11% forever, but recommend a 9% return on equity. The only way this utility can earn 11% is that rates be set by the regulator so that the utility will, in fact, earn 11%...

Third, the empirical finance literature discussed earlier demonstrates that the sustainable growth method of determining growth is not as significantly correlated to measures of value, such as stock price and price/earnings ratios, as other historical measures or analysts' growth forecasts. *Other proxies for growth such as historical growth rates and analysts' growth forecasts*

1 *outperform retention growth estimates. (emphasis added)*⁸⁷

2 The circular nature of the sustainable growth DCF is illustrated in the
3 following steps:

- 4 1. The sustainable growth rate relies on an expected ROE on book common
5 equity;
- 6 2. That expected ROE on book common equity is then used in a DCF
7 analysis to establish an ROE cost rate related to the market value of the
8 common stock; and
- 9 3. That market-related ROE, if authorized as the allowed ROE in a regulatory
10 proceeding, becomes the expected ROE on book common equity.

11 Put simply, the estimated ROEs Mr. Gorman used to derive his sustainable
12 growth rate become the regulatory outcome of this proceeding, even as those
13 ROEs are themselves based on regulatory outcomes.

14 **Q. DO YOU HAVE ANY OTHER CONCERNS WITH THE USE OF THE**
15 **SUSTAINABLE GROWTH RATE AS A MEASURE OF LONG-TERM**
16 **GROWTH?**

17 A. Yes. The sustainable growth rate assumes increasing retention ratios necessarily
18 are associated with increasing future growth. The underlying premise is that
19 future earnings will increase as the retention ratio increases. That is, if future
20 growth is modeled as “b x r” (where “b” is the retention ratio and “r” is the earned
21 return on book equity), growth will increase as “b” increases. There are several
22 reasons, however, why that may not be the case. Consequently, it is appropriate to

⁸⁷ Morin, at 306-307.

1 determine whether the data supports the assumption that higher earnings retention
2 ratios necessarily are associated with higher future earnings growth rates.

3 **Q. DOES INDEPENDENT RESEARCH SUPPORT THE FINDING THAT**
4 **FUTURE EARNINGS AND THE RETENTION RATIO ARE NOT**
5 **POSITIVELY RELATED?**

6 A. Yes. In 2006, for example, two articles in Financial Analysts Journal addressed
7 the theory that high dividend payouts (*i.e.*, low retention ratios) are associated
8 with low future earnings growth.⁸⁸ Both articles cite a 2003 study by Arnott and
9 Asness,⁸⁹ who found that over the course of 130 years of data, future earnings
10 growth is associated with high, rather than low, payout ratios.⁹⁰ In essence, the
11 findings of all three studies found that there is a negative, not a positive,
12 relationship between the two.

13 **Q. DID YOU PERFORM ANY ANALYSES TO TEST THAT ASSUMPTION?**

14 A. Yes, I did. Using EPS and dividends per share (“DPS”) data from *Value Line*, I
15 calculated the historical dividend payout ratio, retention ratio, and subsequent
16 five-year average earnings growth rate for each company used in Mr. Gorman’s
17 proxy group. I then performed a regression analysis in which the dependent
18 variable was the five-year earnings growth rate, and the explanatory variable was
19 the earnings retention ratio. The purpose of that analysis was to determine whether

⁸⁸ See, Ping Zhou, William Ruland, *Dividend Payout and Future Earnings Growth*, Financial Analysts Journal, Vol. 62, No. 3, 2006. See also, Owain ap Gwilym, James Seaton, Karina Suddason, Stephen Thomas, *International Evidence on the Payout Ratio, Earnings, Dividends and Returns*, Financial Analysts Journal, Vol. 62, No. 7, 2006.

⁸⁹ See, Robert Arnott, Clifford Asness, *Surprise: Higher Dividends = Higher Earnings Growth*, Financial Analysts Journal, Vol. 59, No. 1, January/February 2003.

⁹⁰ Because the payout ratio is the inverse of the retention ratio, the authors found that future earnings growth is negatively related to the retention ratio.

1 the data empirically supports the assumption that higher retention ratios
2 necessarily produce higher earnings growth rates.

3 **Q. WHAT DID THAT ANALYSIS REVEAL?**

4 A. As shown in Schedule DWD-6R and Table 13, below, there was a statistically
5 significant negative relationship between the five-year average earnings growth
6 rate and the earnings retention ratio. That is, based on *Value Line* data, earnings
7 growth actually decreased as the retention ratio increased. Those findings clearly
8 call into question Mr. Gorman's use of the sustainable growth rate as a proxy for
9 the long-term growth rate in his analysis.

10 **Table 13: Retention Ratio / Earnings Growth⁹¹**

	Coefficient	Standard Error	t-Statistic
Intercept	0.101	0.012	8.090
Retention Ratio	-0.179	0.027	-6.532

11 **Q. DO THOSE RESULTS MAKE PRACTICAL SENSE?**

12 A. Yes, they do. As a practical matter, dividend-paying companies (such as utilities)
13 are reluctant to reduce dividends, given the often-disproportionate stock price
14 reaction. Consequently, a higher than expected dividend increase may signal
15 management's confidence in higher future earnings and cash flow. That is, a near-
16 term reduction in the retention ratio supporting a higher dividend increase may
17 provide information or "signaling" content regarding future growth prospects.⁹²
18 In view of the foregoing, Mr. Gorman's use of a sustainable growth rate DCF
19 analysis is an exercise in circularity which ignores the basic principle of rate
20 base/rate of return regulation.

⁹¹ Schedule DWD-6R.

⁹² See, Eugene F. Brigham, Louis C. Gapenski, *Financial Management, Theory and Practice*, Seventh Ed., 1994, at 618.

1 **Q. IS MR. GORMAN’S MULTI-STAGE DCF MODEL A REASONABLE**
2 **APPROACH TO ESTIMATING THE COMPANY’S ROE?**

3 A. No, it is not. The multi-stage DCF model and its growth rates reflect the
4 company/industry life cycle, which is typically described in three stages: (1) the
5 growth stage, which is characterized by rapidly expanding sales, profits, and
6 earnings. In the growth stage, dividend payout ratios are low in order to grow the
7 firm; (2) the transition stage, which is characterized by slower growth in sales,
8 profits, and earnings. In the transition stage, dividend payout ratios increase, as
9 their need for exponential growth diminishes; and (3) the maturity (steady-state)
10 stage, which is characterized by limited, slightly attractive investment
11 opportunities, and steady earnings growth, dividend payout ratios, and returns on
12 equity.⁹³

13 **Q. ARE THERE EXAMPLES IN BASIC FINANCE TEXTS THAT SUPPORT**
14 **YOUR POSITION?**

15 A. Yes. For example, in *Investments*, life cycles and multi-stage growth models are
16 discussed:

17 As useful as the constant-growth DDM (dividend discount model)
18 formula is, you need to remember that it is based on a simplifying
19 assumption, namely, that the dividend growth rate will be constant
20 forever. In fact, firms typically pass through life cycles with very
21 different dividend profiles in different phases. In early years, there
22 are ample opportunities for profitable reinvestment in the
23 company. Payout ratios are low, and growth is correspondingly
24 rapid. In later years, the firm matures, production capacity is
25 sufficient to meet market demand, competitors enter the market,
26 and attractive opportunities for reinvestment may become harder to
27 find. In this mature phase, the firm may choose to increase the

⁹³ Dr. Woolridge also does not recommend the application of the multi-stage DCF model to utility companies as discussed on pages 30-31 of his direct testimony.

dividend payout ratio, rather than retain earnings. The dividend level increases, but thereafter it grows at a slower pace because the company has fewer growth opportunities.

Table 18.2 illustrates this pattern. It gives Value Line's forecasts of return on assets, dividend payout ratio, and 3-year growth in earnings per share for a sample of the firms in the computer software industry versus those of east coast electric utilities...

By in large, the software firms have attractive investment opportunities. The median return on assets of these firms is forecast to be 19.5%, and the firms have responded with high plowback ratios. Most of these firms pay no dividends at all. The high return on assets and high plowback result in rapid growth. The median growth rate of earnings per share in this group is projected at 17.6%.

In contrast, the electric utilities are *more representative of mature firms*. Their median return on assets is lower, 6.5%; dividend payout is higher, 68%; and median growth is lower, 4.6%.

To value companies with temporarily high growth, analysts use a multistage version of the dividend discount model. Dividends in the early high-growth period are forecast and their combined present value is calculated. Then, once the firm is projected to settle down to *a steady-growth phase, the constant-growth DDM is applied to value the remaining stream of dividends.*⁹⁴ (Clarification and emphasis added)

The economics of the public utility business indicate that the industry is in the steady-state, or constant-growth stage of a multi-stage DCF, which would mean that the three- to five-year projected growth rates for each company would be the "steady-state" or terminal growth rate appropriate for the DCF model for utility companies, not the GDP growth rate, which is not a company-specific growth rate, nor is it an upward bound for growth.

⁹⁴ Z. Bodie, A. Kane,, and A. J. Marcus, *Investments*, 7th Edition, McGraw-Hill Irwin, 2008, at 616-617.

1 **Q. WHY IS LONG-TERM GROWTH IN GDP NOT AN UPPER LIMIT FOR**
2 **GROWTH, AS MR. GORMAN CONTENDS?**

3 A. First, GDP is not a market measure – rather it is a measure of the value of the total
4 output of goods and services, excluding inflation, in an economy. While I
5 understand that EPS growth is also not a market measure, it is well established in
6 the financial literature that projected growth in EPS is the superior measure of
7 dividend growth in a DCF model.⁹⁵ Furthermore, GDP is simply the sum of all
8 private industry and government output in the United States, and its growth rate is
9 simply an average of the value of those industries. To illustrate, Schedule DWD-
10 7R presents the compound growth rate of the industries that comprise GDP from
11 1947 to 2019. Of the 15 industries represented, seven industries, including
12 utilities, grew faster than the overall GDP, and eight industries grew slower than
13 the overall GDP.⁹⁶

14 **Q. IS THERE A REALISTIC POSSIBILITY THAT A SINGLE INDUSTRY**
15 **WOULD BECOME THE ENTIRE ECONOMY WITH A PERPETUAL,**
16 **SUSTAINABLE GROWTH RATE HIGHER THAN THE GDP GROWTH**
17 **RATE?**

18 A. No, and even if one assumed it was realistically possible, it would take an
19 extraordinary amount of time to do so. To illustrate, I used the value added by
20 industry from 1947 to 2019 in Schedule DWD-7R and used the compound annual

⁹⁵ Harris, *Using Analysts' Growth Forecasts to Estimate Shareholder Required Rate of Return*, Financial Management, Spring 1986; Christofi, Christofi, Lori and Moliver, *Evaluating Common Stocks Using Value Line's Projected Cash Flows and Implied Growth Rate*, Journal of Investing, Spring 1999; Harris and Marston, *Estimating Shareholder Risk Premia Using Analysts' Growth Forecasts*, Financial Management, Summer 1992; and Vander Weide and Carleton, *Investor Growth Expectations: Analysts vs. History*, The Journal of Portfolio Management, Spring 1988.

⁹⁶ Source of Information: Bureau of Economic Analysis.

1 growth rates for the highest growth rate industry (Educational Services,
2 Healthcare, and Social Assistance, 8.71% / year) to see when that industry would
3 comprise the entire economy. In the year 2244, or almost 300 years from the 1947
4 starting point, the industry would comprise over 50% of GDP, and in the year
5 5449, 3,502 years after the 1947 starting point, the industry would comprise 100%
6 of GDP.⁹⁷

7 **C. Application of the Risk Premium Model**

8 **Q. PLEASE BRIEFLY DESCRIBE MR. GORMAN'S RPM.**

9 A. Mr. Gorman defines the RPM as the difference between average annual
10 authorized equity returns and a measure of long-term interest rates from 1986
11 through 2020.⁹⁸ Mr. Gorman's first approach to estimating the RPM looks to the
12 30-year Treasury yield, and his second considers the average A-rated utility bond
13 yield. In each case, Mr. Gorman establishes his risk premium estimates by
14 reference to five-year and ten-year rolling averages.

15 Mr. Gorman looks to 34 years of returns, arguing "it is reasonable to
16 assume that averages of annual achieved returns over long time periods will
17 generally converge on the investors' expected returns."⁹⁹ He argues his RPM is
18 based on "investor expectations, not actual investment returns, and thus, need not

⁹⁷ To put the amount of time that will take these two milestones to happen in perspective, 302 years ago, in the year 1719, France and Spain were at war in New France (now Louisiana), and approximately 3,478 years ago, in the year 1457 BC, the first recorded battle in military history, the Battle of Megiddo, was waged between the Egyptians, led by Pharaoh Thutmose III against Kadesh, Canaanite, Mitanni, and Amurru forces. *See also*, Zager and Evans, *In the Year 2525*, on 2525 (Exordium & Terminus) (RCA 1968).

⁹⁸ Gorman Direct Testimony, at 41.

⁹⁹ *Ibid*, at 43.

encompass a very long historical time period.”¹⁰⁰ Table 14 below presents Mr. Gorman’s RPM results.

Table 14: Mr. Gorman’s Risk Premium ROE Results¹⁰¹

Mr. Gorman’s Risk Premium Estimates	Projected 30-Year Treasury Yield: 2.40%	13-Week Avg Baa-Rated Utility Bond Yield: 3.21%
Treasury: 7.02%	9.42%	
Utility Bond: 5.77%		8.98%

Q. DO YOU HAVE SPECIFIC CONCERNS WITH MR. GORMAN’S RPM?

A. Yes. I have two concerns with Mr. Gorman’s analysis, namely, the use of the 1986-2020 period and that Mr. Gorman’s method and recommendation ignore an important relationship revealed by his own data, *i.e.*, that the ERP has a strong negative correlation to the level of interest rates (whether measured by U.S. Treasury Bonds or public utility bond yields).

Q. WHAT ARE YOUR CONCERNS WITH MR. GORMAN’S 1986-2020 PERIOD TO DETERMINE AN ERP?

A. Mr. Gorman selected the period 1986-2020 “because public utility stocks consistently traded at a premium to book value during that period.”¹⁰² He concludes that “[o]ver this period, an analyst can infer that authorized returns on equity were sufficient to support market prices that at least exceeded book value.”¹⁰³ Mr. Gorman is mistaken. Market values can diverge from book values for a myriad of reasons including, but not limited to, EPS and DPS expectations,

¹⁰⁰ *Ibid.*

¹⁰¹ *Ibid.*, at 47.

¹⁰² *Ibid.*, at 41.

¹⁰³ *Ibid.*

1 merger/acquisition expectations, interest rates, etc. As noted by Phillips:

2 Many question the assumption that market price should equal book
3 value, believing that 'the earnings of utilities should be sufficiently
4 high to achieve market-to-book ratios which are consistent with
5 those prevailing for stocks of unregulated companies.¹⁰⁴

6 In addition, Bonbright states:

7 In the first place, commissions cannot forecast, except within wide
8 limits, the effect their rate orders will have on the market prices of
9 the stocks of the companies they regulate. In the second place,
10 *whatever the initial market prices may be, they are sure to change*
11 *not only with the changing prospects for earnings, but with the*
12 *changing outlook of an inherently volatile stock market.* In short,
13 market prices are beyond the control, though not beyond the
14 influence of rate regulation. Moreover, even if a commission did
15 possess the power of control, any attempt to exercise it ... would
16 result in harmful, uneconomic shifts in public utility rate levels.
17 (italics added)¹⁰⁵

18 In addition, relative to the 1986-2020 time period, Duff & Phelps' SBBI-
19 2020 also makes it clear that the arbitrary selection of short historical periods is
20 highly suspect and unlikely to be representative of long-term trends in market
21 data. For example, SBBI-2020 states:

22 The estimate of the equity risk premium depends on the length of
23 the data series studied. A proper estimate of the equity risk
24 premium requires a data series long enough to give a reliable
25 average without being unduly influenced by very good and very
26 poor short-term returns. When calculated using a long data series,
27 the historical equity risk premium is relatively stable. Furthermore,
28 because an average of the realized equity risk premium, is quite
29 volatile when calculated using a short history, using a long series
30 makes it less likely that the analyst can justify any number he or
31 she wants.¹⁰⁶

¹⁰⁴ Charles F. Phillips, The Regulation of Public Utilities, Public Utilities Reports, Inc., 1993, at 395. ("Phillips")

¹⁰⁵ James C. Bonbright, Albert L. Danielsen and David R. Kamerschen, Principles of Public Utility Rates (Public Utilities Reports, Inc., 1988), at 334. ("Bonbright")

¹⁰⁶ SBBI-2020 at 10-23.

1 The supportive academic literature demonstrates and confirms that while
2 regulation is a substitute for marketplace competition, it has a limited effect on,
3 but no direct control over, market prices, and hence, market-to-book (“M/B”)
4 ratios of regulated utilities, and that subset of data, could be subject to data
5 manipulation. Thus, no valid conclusion of ERPs can be drawn for the 1986-2020
6 period.

7 **Q. IS THERE A DIRECT RELATIONSHIP BETWEEN THE M/B RATIOS**
8 **OF UNREGULATED COMPANIES AND THEIR EARNED RATES OF**
9 **RETURN ON BOOK COMMON EQUITY?**

10 A. No. Since regulation acts as a surrogate for competition, it is reasonable to look
11 to the competitive environment for evidence of a direct relationship between M/B
12 ratios and earned returns on common equity. To determine if Mr. Gorman’s
13 implicit assumption of such a direct relationship has any merit, I observed the
14 M/B ratios and the earned returns on common equity of the S&P Industrial Index,
15 and the S&P 500 Composite Index, over a long period of time. On Schedule
16 DWD-8R, I have shown the M/B ratios, rates of return on book common equity
17 (earnings / book ratios), annual inflation rates, and the earnings / book ratios net
18 of inflation (real rate of earnings) annually for the years 1947 through 2019. In
19 each year, the M/B ratios of the S&P Industrial Index equaled or exceeded 1.00
20 times (or 100%). In 1949, the only year in which the M/B ratio was 1.00, the real
21 rate of earnings on book equity, adjusted for deflation, was 18.1% (16.3% +
22 1.8%). In contrast, in 1961, when the S&P Industrial Index experienced an M/B
23 ratio of 2.01 times, the real rate of earnings on book equity for the S&P Industrial
24 Index was only 9.1% (9.8%-0.7%). In 1997, the M/B ratio for the Index was 5.88

1 times, while the average real rate of earnings on book equity was 22.9% (24.6%-
2 1.7%).

3 This analysis clearly demonstrates that competitive, unregulated
4 companies have never sold below book value, on average, and have sold at book
5 value in only one year since 1947; consequently, contrary to Mr. Gorman's
6 position that there is no relationship between earnings / book ratios and M/B
7 ratios.

8 Because this lack of a relationship between earnings / book ratios and M/B
9 ratios covers a 72-year period, 1947 through 2019, it cannot be validly argued that
10 going forward a relationship would exist between earnings / book ratios and M/B
11 ratios. The analysis shown on Schedule DWD-8R coupled with the supportive
12 academic literature, demonstrate the following:

- 13 1. That while regulation is a substitute for marketplace competition, it can
14 influence but not directly control market prices, and hence, M/B ratios;
15 and
- 16 2. That the rates of return investors expect to achieve, and which influence
17 their willingness to pay market prices well in excess of book values, have
18 no meaningful, direct relationship to rates of earnings on book equity.

19 Thus, no valid conclusion of ERPs can be drawn for the 1986-2020 period
20 because of M/B ratios in excess of one.

1 **Q. DID ANYTHING IN MR. GORMAN’S DISCUSSION OF HIS RPM**
2 **REINFORCE ANY OF THE OBSERVATIONS OR CONCLUSIONS**
3 **PRESENTED IN YOUR DIRECT TESTIMONY?**

4 A. Yes. In Table 7 on page 45 of his Direct Testimony, Mr. Gorman shows that
5 current yield spreads between utility bonds and Treasury bonds are above the
6 long-term average spread, and significantly above the yield spreads in 2018, 2019,
7 and 2020. In view of this table, Mr. Gorman states that “this is an indication that
8 the market is placing a higher value on utilities currently, and indicating a
9 preference for lower-risk investment securities.”¹⁰⁷ Notably, Mr. Gorman’s table
10 demonstrates investors are requiring higher returns for utility debt relative to U.S.
11 Treasuries. Although returns required for debt differ from investors’ requirements
12 for equity returns, Mr. Gorman’s data supports my position that the direction of
13 returns required by utility investors is increasing, not decreasing.

14 **Q. DID ANY OTHER DATA THAT MR. GORMAN PRESENTS IN HIS RPM**
15 **ANALYSIS REINFORCE ANY OBSERVATIONS OR CONCLUSIONS**
16 **PRESENTED IN YOUR DIRECT TESTIMONY?**

17 A. Yes. Reviewing the data in Schedules MPG-12 and MPG-13, reveals the ERP as
18 presented by Mr. Gorman moves inversely with changes in interest rates. In other
19 words, as interest rates fall, the ERP increases. This finding is consistent with the
20 relationship discussed in detail in my Direct Testimony.¹⁰⁸

¹⁰⁷ Gorman Direct Testimony, at 45.

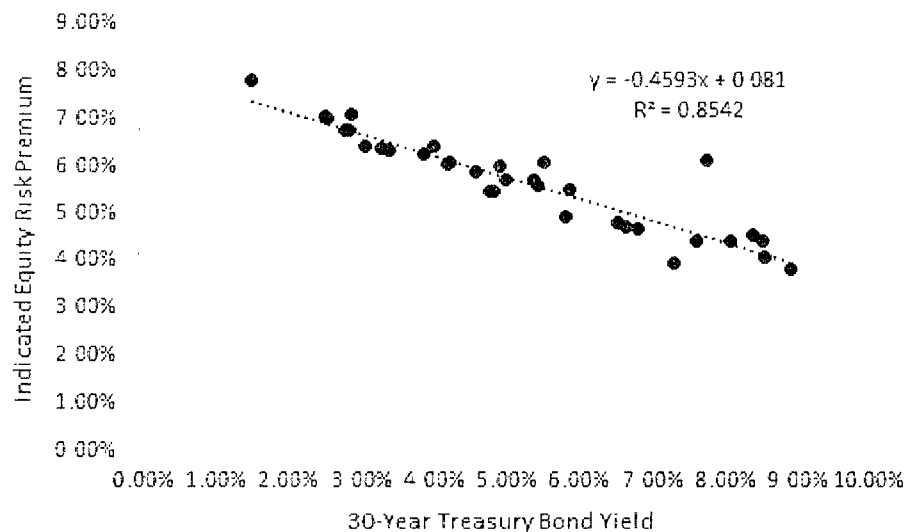
¹⁰⁸ D’Ascendis Direct Testimony, at 39-40.

1 **Q. PLEASE EXPLAIN.**

2 A. As shown on Schedule DWD-9R and Charts 10 and 11, below, empirical analyses
3 of Mr. Gorman's data presented in Schedules MPG-12 and MPG-13, ERPs have
4 moved inversely with changes in U.S. Treasury bond yields and utility bond yields
5 for the period 1986-2020. This inverse relationship between ERPs and interest
6 rates is well-supported in the academic literature as noted by Morin:

7 Published studies by Brigham, Shome, and Vinson (1985), Harris
8 (1986), Harris and Marston (1992, 1993), Carleton, Chambers, and
9 Lakonishok (1983), Morin (2005), McShane (2005), and others
10 demonstrate that, beginning in 1980, risk premiums varied
11 inversely with the level of interest rates - rising when rates fell and
12 declining when interest rates rose.¹⁰⁹

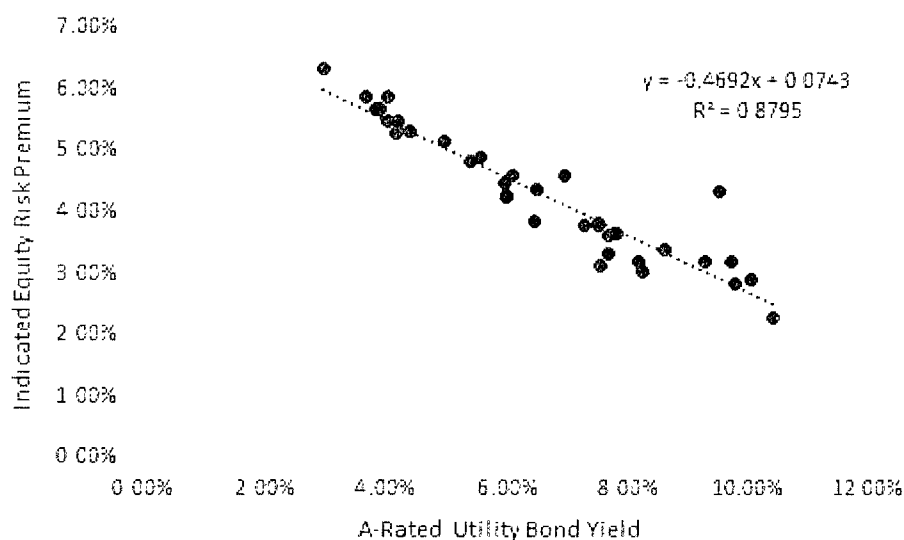
13 **Chart 10: Relationship Between the Equity Risk Premium and 30-Year**
14 **Treasury Yield Presented in Schedule MPG-12 (Electric Utilities)**



15

¹⁰⁹ Morin, at 128.

Chart 11: Relationship Between the Equity Risk Premium and A-Rated Utility Bond Yield Presented in Schedule MPG-13 (Electric Utilities)



Correctly applying a fully-projected risk-free rate of 2.48%¹¹⁰ and projected Baa2-rated utility bond yield of 4.04%¹¹¹ to the regression equations in Charts 10 and 11 result in indicated ROEs of 9.44% and 9.57%, respectively.

D. Application of the Capital Asset Pricing Model

Q. PLEASE BRIEFLY SUMMARIZE MR. GORMAN'S CAPM ANALYSIS AND RESULTS.

A. Mr. Gorman develops two CAPM estimates. The first analysis combines an estimate of the MRP of 9.44%, average *Value Line* Beta coefficients of 0.89 for his electric proxy group based on current estimates, and his current risk-free rate of 1.85%, to calculate a CAPM estimate of 10.24%. Mr. Gorman's second CAPM estimate is based on an estimate of the MRP of 8.90%, a normalized Beta coefficient of 0.70, and a projected risk-free rate of 2.40%, which produces a

¹¹⁰ Schedule DWD-9R.

¹¹¹ See, *Blue Chip Financial Forecasts*, April 1, 2021, at 2.

1 CAPM result of 8.65%.¹¹² Mr. Gorman's first MRP estimate is based on the
2 historical average real market return of 9.00% over the 1926-2019 period as
3 reported by Duff & Phelps, combined with an expected inflation rate of 2.1%, to
4 calculate an expected market return of 11.29%.¹¹³ Subtracting his 2.40%
5 projected risk-free rate results in an MRP of 8.89%.¹¹⁴

6 Mr. Gorman's second MRP estimate of 9.44% is based on the difference
7 between the expected MRP of 11.29% and the current risk-free rate of 1.85%.¹¹⁵

8 **Q. IS MR. GORMAN'S CAPM METHODOLOGY AND RESULT SOUND?**

9 A. No. Mr. Gorman's CAPM analysis is flawed in at least three respects: (1) while
10 Mr. Gorman does use a short-term projected risk-free rate in his CAPM analysis,
11 he does not consider the long-term projection of the risk-free rate published by
12 *Blue Chip*; (2) his choice and calculation of his MRP are flawed; and (3) he did
13 not perform an ECAPM analysis.

14 **Q. DOES MR. GORMAN RELY ON *BLUE CHIP* THROUGHOUT HIS**
15 **ANALYSIS?**

16 A. Yes, he does. Specifically, Mr. Gorman uses *Blue Chip* for his short-term
17 projected interest yield on 30-year Treasury bonds for his CAPM analysis and his
18 terminal growth rate in his multi-stage DCF model analysis. Because of Mr.
19 Gorman's reliance on, and respect for *Blue Chip*, I find it curious that he does not
20 use the long-term projections published by *Blue Chip* for his risk-free rate.

¹¹² Gorman Direct Testimony, at 50; Schedule MPG-17.

¹¹³ *Ibid.*

¹¹⁴ *Ibid.*

¹¹⁵ *Ibid.*

1 Not incorporating the longest projection available is inconsistent with Mr.
2 Gorman's application of the DCF model in which there is an assumption that the
3 projected "g" is constant into perpetuity, creating a mismatch between the
4 application of his models. It is also inconsistent with the Efficient Market
5 Hypothesis ("EMH") on which the DCF is based. According to Eugene F.
6 Fama,¹¹⁶ a market in which prices always "fully reflect" available information is
7 called "efficient." There are three forms of the EMH, namely:

- 8 1. The "weak" form asserts that all past market prices and data are fully
9 reflected in securities prices. In other words, technical analysis cannot
10 enable an investor to "outperform the market."
- 11 2. The "semi-strong" form asserts that all publicly available information is
12 fully reflected in securities prices. In other words, fundamental analysis
13 cannot enable an investor to "outperform the market."
- 14 3. The "strong" form asserts that all information, both public and private, is
15 fully reflected in securities prices. In other words, even insider
16 information cannot enable an investor to "outperform the market."

¹¹⁶ Eugene F. Fama, *Efficient Capital Markets. A Review of Theory and Empirical Work*, The Journal of Finance, Vol. 25, No. 2. (May 1970), at 383-417.

1 The “semi-strong” form is generally considered the most realistic because
2 the illegal use of insider information can enable an investor to “beat the market”
3 and earn excessive returns, thereby disproving the “strong” form. The semi-
4 strong form of the EMH assumes that all relevant information is available to the
5 investor, which means the long-term forecasted interest rate would be considered
6 by investors when making investment decisions and, therefore, should be included
7 in Mr. Gorman’s CAPM analysis.

8 **Q. DO YOU AGREE WITH MR. GORMAN’S FORWARD-LOOKING MRP**
9 **ESTIMATE?**

10 A. No, I do not. Although Mr. Gorman applies a projection of inflation to develop
11 his “forward-looking” MRP estimate, his approach is based principally on the
12 historical real market rate of return. The MRP represents the additional return
13 required by equity investors to assume the risks of owning the “market portfolio”
14 of equity relative to long-term Treasury securities. As with other elements of cost
15 of common equity analyses, the MRP is meant to be a forward-looking parameter.
16 Relying on an MRP calculated using historical returns may produce results that
17 are inconsistent with investor sentiment and current conditions in capital markets.
18 The fundamental analytical issue in applying the CAPM is to ensure that all three
19 components of the model (*i.e.*, the risk-free rate, Beta coefficient, and the MRP)
20 are consistent with market conditions and investor expectations. As, Morningstar
21 observes:

22 It is important to note that the expected equity risk premium, as it
23 is used in discount rates and cost of capital analysis, is a forward-
24 looking concept. That is, the equity risk premium that is used in the
25 discount rate should be reflective of what investors think the risk

1 premium will be going forward.¹¹⁷

2 Longstanding financial research has shown the MRP to vary over time
3 along with market conditions. French, Schwert, and Stambaugh, for example,
4 found the MRP to be positively related to predictable market volatility.¹¹⁸ Using
5 forward-looking measures of the expected market return, Harris and Marston
6 found "...strong evidence...that market risk premia change over time and, as a
7 result, use of a constant historical average risk premium is not likely to mirror
8 changes in investor return requirements."¹¹⁹ Among their findings is that the
9 MRP is inversely related to Government bond yields. That is, as interest rates fall,
10 the MRP increases. Unlike Mr. Gorman's position, financial researchers have
11 found the MRP to be time-varying, and a function of economic parameters
12 including interest rates, as discussed previously.¹²⁰

13 **Q. DOES MR. GORMAN PERFORM AN ECAPM IN HIS ANALYSIS?**

14 A. No. Mr. Gorman failed to consider the ECAPM, despite the fact that numerous
15 tests of the CAPM have confirmed the ECAPM's validity by showing that the
16 empirical SML described by the traditional CAPM is not as steeply sloped as the
17 predicted SML as discussed previously.

¹¹⁷ Morningstar, Inc., 2013 Ibbotson Stocks, Bonds, Bills and Inflation Valuation Yearbook, at 53.

¹¹⁸ Kenneth R. French, G. William Schwert, Robert F. Stambaugh, *Expected Stock Returns and Volatility*, Journal of Financial Economics 19 (1987), at 27.

¹¹⁹ See, Robert S. Harris, Felicia C. Marston, *Estimating Shareholder Risk Premia Using Analysts' Growth Forecasts*, Financial Management, Summer 1992, at 69.

¹²⁰ As explained in the Direct Testimony of Dylan D'Ascendis, at 39-40, there is a similar negative relationship between interest rates and the ERP.

1 **Q. DOES THE USE OF ADJUSTED BETA COEFFICIENTS ADDRESS THE**
2 **EMPIRICAL ISSUES WITH THE CAPM?**

3 A. No. A common critique of the ECAPM is the claim that using adjusted Beta
4 coefficients in a CAPM analysis addresses the empirical issues with the CAPM,
5 discussed above, by increasing the expected returns for low beta stocks and
6 decreasing the returns for high beta stocks, concluding that there is no need to use
7 the ECAPM. This is an incorrect understanding of the ECAPM. Using adjusted
8 Beta coefficients in a CAPM analysis is not equivalent to using the ECAPM, nor
9 is it an unnecessary redundancy.

10 Beta coefficients are adjusted because of their general regression tendency
11 to converge toward 1.0 over time, *i.e.*, over successive calculations of the Beta
12 coefficient. As also noted above, numerous studies have determined that the SML
13 described by the CAPM formula at any given moment in time is not as steeply
14 sloped as the predicted SML. Morin states:

15 Some have argued that the use of the ECAPM is inconsistent with
16 the use of adjusted betas, such as those supplied by Value Line and
17 Bloomberg. This is because the reason for using the ECAPM is to
18 allow for the tendency of betas to regress toward the mean value of
19 1.00 over time, and, since Value Line betas are already adjusted for
20 such trend [sic], an ECAPM analysis results in double-counting.
21 This argument is erroneous. Fundamentally, the ECAPM is not an
22 adjustment, increase or decrease, in beta. This is obvious from the
23 fact that the expected return on high beta securities is actually
24 lower than that produced by the CAPM estimate. The ECAPM is a
25 formal recognition that the observed risk-return tradeoff is flatter
26 than predicted by the CAPM based on myriad empirical evidence.
27 The ECAPM and the use of adjusted betas comprised two separate
28 features of asset pricing. Even if a company's beta is estimated
29 accurately, the CAPM still understates the return for low-beta
30 stocks. Even if the ECAPM is used, the return for low-beta
31 securities is understated if the betas are understated. Referring
32 back to Figure 6-1, the ECAPM is a return (vertical axis)

1 adjustment and not a beta (horizontal axis) adjustment. Both
2 adjustments are necessary.¹²¹

3 Moreover, the slope of the SML should not be confused with the Beta
4 coefficient. As Brigham and Gapenski state:

5 The slope of the SML reflects the degree of risk aversion in the
6 economy – the greater the average investor's aversion to risk, then
7 (1) the steeper is the slope of the line, (2) the greater is the risk
8 premium for any risky asset, and (3) the higher is the required rate
9 of return on risky assets.^[footnote omitted]

10
11 Students sometimes confuse beta with the slope of the SML. This
12 is a mistake. As we saw earlier in connection with Figure 6-8, and
13 as is developed further in Appendix 6A, beta does represent the
14 slope of a line, but *not* the Security Market Line. This confusion
15 arises partly because the SML equation is generally written, in this
16 book and throughout the finance literature, as $k_i = R_F + b_i(k_M - R_F)$, and in this form b_i looks like the slope coefficient and $(k_M - R_F)$ the variable. It would perhaps be less confusing if the second
17 term were written $(k_M - R_F)b_i$, but this is not generally done.¹²²

20 In addition, in Appendix 6A of Brigham and Gapenski's textbook entitled
21 Calculating Beta Coefficients, the authors demonstrate that the Beta coefficient,
22 which accounts for regression bias, is not a return adjustment, but rather is based
23 on the slope of a different line.¹²³

¹²¹ Morin, at 191.

¹²² Eugene F. Brigham and Louis C. Gapenski, Financial Management – Theory and Practice, 4th Ed. (The Dryden Press, 1985), at 201-204.

¹²³ *Ibid.*, at 220-222.

1 Hence, using adjusted Beta coefficients does not address the previously
2 discussed empirical issues with the CAPM. In view of the foregoing, using
3 adjusted Beta coefficients in both the traditional and empirical applications of the
4 CAPM is neither incorrect nor inconsistent with the financial literature, and is not
5 an unnecessary redundancy. In view of financial theory and practical research, it
6 is therefore appropriate to include the ECAPM when estimating the cost of
7 common equity.

8 **E. Financial Integrity**

9 **Q. PLEASE BRIEFLY SUMMARIZE MR. GORMAN’S ASSESSMENT OF**
10 **HIS RECOMMENDATION AS IT AFFECTS MEASURES OF THE**
11 **COMPANY’S FINANCIAL INTEGRITY.**

12 A. Mr. Gorman evaluates the reasonableness of his ROE recommendation by
13 calculating two *pro forma* ratios: Debt to EBITDA¹²⁴ and Funds From Operations
14 (“FFO”) to Total Debt to determine whether they would fall within S&P’s
15 guidance ranges for an investment grade rating. In his Schedule MPG-18, Mr.
16 Gorman develops those ratios based on the Company’s proposed capital structure.
17 Based on his *pro forma* analysis, Mr. Gorman argues his recommended ROE and
18 capital structure support SWEPCO’s investment grade bond rating.¹²⁵ An
19 important consideration is that Mr. Gorman’s analysis fundamentally assumes the
20 Company will earn the entirety of its authorized ROE on a going-forward basis.

¹²⁴ Earnings Before Interest, Taxes, Depreciation, and Amortization.
¹²⁵ Gorman Direct Testimony, at 55-58.

1 **Q. ARE CREDIT RATINGS DETERMINED PRINCIPALLY BY THE TYPES**
2 **OF *PRO FORMA* METRICS MR. GORMAN CALCULATES IN**
3 **SCHEDULE MPG-18?**

4 A. No. S&P's ratings process considers a range of both quantitative and qualitative
5 data. Cash Flow / Leverage considerations are one element of a broad set of
6 criteria.¹²⁶ Unlike Mr. Gorman's *pro forma* analysis, S&P's assessment does not
7 look to a single period or assume static relationships among variables. Rather,
8 S&P reviews credit ratios "on a time series basis with a clear forward-looking
9 bias."¹²⁷ S&P explains that the time series length depends on a number of
10 qualitative factors, but generally includes two years of historical data, and three
11 years of projections. Further, the ratios depend on "base case" projections
12 considering "current and near-term" economic conditions, industry assumptions,
13 and financial policies. Consequently, even if we assume credit determinations are
14 driven by two *pro forma* metrics, the actual assessment of those metrics is far
15 more complex than Mr. Gorman's analysis suggests.

16 **Q. DO YOU AGREE WITH THE PREMISE OF MR. GORMAN'S ANALYSIS**
17 **AND CONCLUSIONS?**

18 A. No, I do not. Simply maintaining an "investment grade" rating is an inappropriate
19 standard. According to S&P, only two of the 245 utilities have below investment
20 grade long-term issuer credit ratings. Because the Company must compete for
21 capital with both affiliated companies, other utilities, and non-utilities, the

¹²⁶ Standard & Poor's Ratings Services, *Corporate Methodology*, November 19, 2013 at 5.

¹²⁷ Gorman Direct Testimony, at 33.

1 Company must have a strong financial profile. Such a profile enables the
2 Company to acquire capital even during constrained and uncertain markets.

3 Additionally, relying on *pro forma* credit metrics to assess the credit
4 implications of any specific ROE or equity ratio is a partial analysis that may lead
5 to incorrect conclusions. That concern arises not only because the credit rating
6 process is complex, but also because a wide range of assumed ROEs and equity
7 ratios produce *pro forma* metrics within the benchmark ranges for a given credit
8 rating. As shown in Schedule DWD-10R and Table 15 below, for example, Mr.
9 Gorman's *pro forma* analysis suggests an ROE in the range of 5.80% to 10.89%
10 would reduce *pro forma* Debt to EBITDA and FFO to Total Debt ratios in the
11 "Significant" financial risk range identified in his analysis.

12 That is, even if we assume an unreasonably low ROE in Mr. Gorman's
13 analysis, the *pro forma* Debt to EBITDA ratios remain in the "Significant"
14 financial risk range. Clearly, a return as low as 5.80%, is an unrealistic estimate
15 of the Company's ROE.

Table 15: Mr. Gorman's Financial Integrity Test Using Alternate Assumptions

	Debt / EBITDA	FFO/ Debt	
S&P Benchmark Ranges			
"Significant"	3.5x – 4.5x	13% - 23%	
Scenario	Debt / EBITDA	FFO/ Debt	Implied Financial Risk Rating
5.80% ROE	4.50x	15.84%	Significant
9.15% ROE (Gorman Recommendation)	3.79x	19.05%	Significant
10.35% ROE (D'Ascendis Recommendation)	3.59x	20.19%	Significant
10.89% ROE	3.50x	20.71%	Significant

F. Adjustments to the Cost of Common Equity

Q. DOES MR. GORMAN CONSIDER A SIZE ADJUSTMENT?

A. No, he does not. Mr. Gorman does not consider a size adjustment for two reasons: (1) since SWEPCO is not publicly-traded, one cannot calculate a market capitalization and therefore cannot compare SWEPCO to the Utility Proxy Group; and (2) SWEPCO is a subsidiary of American Electric Power ("AEP"), and as such, AEP's size should be considered, not SWEPCO's.

Q. DO YOU AGREE WITH MR. GORMAN'S REASONS TO NOT INCLUDE A SIZE ADJUSTMENT?

A. No, I do not. As a preliminary matter, while SWEPCO is not publicly-traded, we have all determined a comparable risk proxy group to determine the ROE for SWEPCO. As our proxy groups are assumed to be of comparable risk, we can also assume that SWEPCO would have comparable market multiples (such as M/B ratios) as the average proxy group company. Because that is the case, multiplying the Company's book equity by the average M/B ratio of the

1 comparable risk proxy group is a suitable proxy for an estimated market
2 capitalization for SWEPCO.

3 **Q. DID YOU COMPARE SWEPCO'S RELATIVE SIZE TO MR. GORMAN'S**
4 **PROXY GROUP USING THE D&P 2020 SIZE STUDY?**

5 A. Yes, I did. As shown on Schedule DWD-5R, in all measures, SWEPCO is
6 smaller than the average proxy company in Mr. Gorman's proxy group with
7 associated size premiums ranging from 0.82% (sales) to 2.06% (average market
8 capitalization). In view of these indicated size premiums, an upward size
9 adjustment of 0.20% to the indicated cost of common equity is extremely
10 conservative.

11 **Q. MR. GORMAN STATES ON PAGE 63 OF HIS DIRECT TESTIMONY**
12 **THAT "BEING PART OF AEP'S TOTAL SYSTEM REDUCES**
13 **SWEPCO'S STAND-ALONE INVESTMENT RISK, INCLUDING BEING**
14 **A SMALL COMPANY." PLEASE COMMENT.**

15 A. Portfolio theory theorizes that owning a basket of risky securities is less risky than
16 individual owners owning separate securities. Utility holding companies invest in
17 individual operating utilities, all at their assumed individual levels of risk. As the
18 utility holding company diversifies its holdings over several geographic and
19 regulatory territories, the overall riskiness of the portfolio decreases even if some
20 of the underlying individual securities are riskier than the portfolio. But this does
21 not imply that the individual utilities held by the holding company are less risky.

1 new projects is a “carbon copy” of the risk profile of the firm.¹³⁰

2 Although Levy and Sarnat discuss a project’s cost of capital relative to a
3 firm’s cost of capital, these principles apply equally to the use of a proxy group-
4 based cost of capital. Each company must be viewed on its own merits, regardless
5 of the source of its equity capital. As *Bluefield* clearly states:

6 A public utility is entitled to such rates as will permit it to earn a
7 return on the value of the property which it employs for the
8 convenience of the public equal to that generally being made at the
9 same time and in the same general part of the country on
10 investments in other business undertakings which are attended by
11 corresponding risks and uncertainties.¹³¹

12 In other words, it is the “risks and uncertainties” surrounding the property
13 employed for the “convenience of the public” which determines the appropriate
14 level of rates. In this proceeding, the property employed “for the convenience of
15 the public” is the rate base of SWEPCO. Thus, it is only the risk of investment in
16 SWEPCO’s rate base that is relevant to the determination of the cost of common
17 equity to be applied to the common equity-financed portion of that rate base.

18 Consistent with the financial principle of risk and return discussed
19 previously,¹³² and the stand-alone nature of ratemaking, an upward adjustment
20 must be applied to the indicated cost of common equity derived from the
21 estimated costs of equity of the proxy groups used in this proceeding.

¹³⁰ Haim Levy & Marshall Sarnat, Capital Investment and Financial Decisions, Prentice/Hall International, 1986, at 465.

¹³¹ *Bluefield*, at 6.

¹³² D’Ascendis Direct Testimony, at 7.

1 **Q. DID MR. GORMAN INCLUDE A CREDIT RISK ADJUSTMENT IN HIS**
2 **RECOMMENDED ROE?**

3 A. No, he did not. As Mr. Filarowicz observed, Mr. Gorman observed that while
4 SWEPCO's Moody's bond rating is riskier than the average proxy group
5 company, its S&P bond rating is less risky. As discussed previously, the average
6 Moody's and S&P bond rating of SWEPCO is riskier than the average Moody's
7 and S&P bond rating of the Utility Proxy Group. As such, Mr. Gorman still
8 should have considered a credit risk adjustment in his analysis.

9 **G. Response to Mr. Gorman's Critique of Company Analyses**

10 **Q. DOES MR. GORMAN HAVE CRITIQUES OF YOUR ROE ANALYSES?**

11 A. Yes. Mr. Gorman's critiques of my analyses are as follows:

- 12 1. A size adjustment is not appropriate;
- 13 2. That my DCF analysis produces results that should be considered "high-
14 end", because the average proxy companies' growth rate is above his
15 estimate of GDP growth;
- 16 3. That my projected returns on the market used for the calculation of my
17 MRP in my CAPM are not reasonable;
- 18 4. That the use of long-term projected growth rates is not appropriate for cost
19 of capital purposes;
- 20 5. That I incorrectly used adjusted Beta coefficients in my ECAPM analysis;
- 21 6. That I incorrectly assume there is a "simplistic" inverse relationship
22 between ERPs and interest rates;
- 23 7. That the PRPM is mis-specified and inappropriate; and

1 8. That the Non-Price Regulated Proxy Group is not comparable to
2 SWEPCO.

3 I have addressed critiques 1, 2, 4, and 5 previously in this Rebuttal
4 Testimony, and will not address them again here. I will address the remaining
5 critiques below.

6 **1. Risk Premium Model**

7 **Q. MR. GORMAN DOES NOT AGREE WITH YOUR “CONTENTION” OF A**
8 **“SIMPLISTIC INVERSE RELATIONSHIP” BETWEEN THE ERP AND**
9 **INTEREST RATES, WHICH HE SUGGESTS IS NOT SUPPORTED BY**
10 **ACADEMIC RESEARCH.¹³³ PLEASE RESPOND.**

11 A. Regarding the inverse relationship between the ERP and interest rates, several
12 academic studies support my findings. In Brigham, Shome, and Vinson’s article,
13 *The Risk Premium Approach to Measuring a Utility’s Cost of Equity*, the authors
14 explain that “with ‘proper’ regulation, utility stocks would provide a better hedge
15 against unanticipated inflation than would bonds.”¹³⁴ In that case, if concerns
16 regarding future inflation increase, the perceived risk of bonds would increase
17 more than the perceived risk of equity. That is, the return required on equity
18 would increase less than the return required on bonds, thereby decreasing the
19 ERP.

20 The relationship between interest rates, inflation, and expected returns also
21 was explained in a 1985 Financial Analysts Journal article:

22 For securities such as bonds, whose cash flows (coupon payments)

¹³³ Gorman Direct Testimony, at 68.

¹³⁴ Eugene F. Brigham, Dilip K. Shome, and Steve R. Vinson, *The Risk Premium Approach to Measuring a Utility’s Cost of Equity*, Financial Management (Spring 1985), at 43.

1 are fixed, an unanticipated increase in inflation results in a decline
2 in price. The decline in price, combined with a fixed coupon, raises
3 the expected return and compensates for the higher rate of
4 inflation.

5 ***

6 For securities such as common stocks, whose cash flows
7 (dividends) are flexible, the price of the security does not
8 necessarily change in response to unanticipated inflation. Stock
9 dividends may rise to offset an increase in the rate of inflation,
10 precluding any need for price adjustment.¹³⁵

11 Other published research has shown the ERP is not constant, but varies
12 inversely with interest rates. Harris and Marston found the ERP to change
13 inversely to changes in interest rates, concluding that "...the notion of a constant
14 risk premium over time is not an adequate explanation of pricing in equity versus
15 debt markets."¹³⁶ Similarly, a study by Maddox, Pippert, and Sullivan, found
16 their results "indicate a statistically significant inverse relationship between
17 interest rates and utility equity risk premiums."¹³⁷ My approach also is similar to
18 the method discussed in Morin's textbook, New Regulatory Finance.¹³⁸ As
19 discussed previously, Mr. Filarowicz also recognizes the inverse relationship
20 between interest rates and ERP, using it as a basis for his RPM. Finally, as Charts
21 10 and 11 above show, Mr. Gorman's own data demonstrates the inverse
22 relationship.

¹³⁵ James L. Farrell Jr, *The Dividend Discount Model. A Primer*, Financial Analysts Journal, November-December 1985, at 23.

¹³⁶ Robert S. Harris and Felicia C. Marston, *The Market Risk Premium: Expectational Estimates Using Analysts' Forecasts*, Journal of Applied Finance, Vol. 11, No. 1, 2001, at 11-12, 14. The authors also found credit spreads are positively related to the ERP.

¹³⁷ Farris M. Maddox, Donna T. Pippert, and Rodney N. Sullivan, *An Empirical Study of Ex Ante Risk Premiums for the Electric Utility Industry*, Financial Management, Vol. 24, No. 3, Autumn 1995 at 95.

¹³⁸ Morin, at 123-125.

Also, when looking at the inverse relationship between ERP and interest rates, as shown on Charts 10 and 11, which use Mr. Gorman's data, the R-squareds are in excess of 85%. This means that the movement in interest rates explains over 85% of the movement in ERP, which I would consider to be a strong relationship.¹³⁹

Q. MR. GORMAN CONTENDS THAT AUTHORIZED ROES SET BY REGULATORY COMMISSIONS ARE NOT ADJUSTED BY MARKET FORCES (I.E., NOT MARKET MEASURES OF THE INVESTOR REQUIRED RETURN).¹⁴⁰ DO YOU AGREE?

A. No. It is widely accepted that the concept of utility regulation as a substitute for competition, *i.e.*, the authorized ROE, is equivalent to the investor required return. The *Cost of Capital Manual*, which is the training manual for SURFA, of which Mr. Gorman and I are members, states:

In a sense, the “visible hand of public regulation was (created) to replace the invisible hand of Adam Smith in order to protect consumers against exorbitant charges, restriction of output, deterioration of service, and unfair discrimination.”^[footnote omitted]

* * *

As indicated above, regulation of public utilities reflects a belief that the competitive mechanism alone cannot be relied upon to protect the public interest. Essentially, it is theorized that a truly competitive market involving utilities cannot survive and, thereby, will fail to promote the general economic welfare. But this does not mean that regulation should alter the norm of competitive behavior for utilities. On the contrary, the primary objective of regulation is to produce market results (*i.e.*, price and quantity supplied) in the utility sectors of the economy closely approximating those conditions which would be obtained if utility

¹³⁹ I also note the t-statistics from these analyses indicate the relationship is highly statistically significant.

¹⁴⁰ Gorman Direct Testimony, at 69.

1 rates and services were determined competitively.¹⁴¹

2 Additionally, in Principles of Public Utility Rates, Bonbright states:

3 Lest the reader of this chapter gain the impression that it is
4 intended to deny the relevance of any tests of reasonable rates
5 derived from the theory or the behavior of competitive prices, let
6 me state my conviction that no such conclusion would be
7 warranted. On the contrary, a study of price behavior both under
8 assumed conditions of pure competition and under actual
9 conditions of mixed competition is essential to the development of
10 sound principles of utility rate control. Not only that: any good
11 program of public utility rate making must go a certain distance in
12 accepting competitive-price principles as guides to monopoly
13 pricing. For rate regulation must necessarily try to accomplish the
14 major objectives that unregulated competition is designed to
15 accomplish; and the similarity of purpose calls for a considerable
16 degree of similarity of price behavior.

17 Regulation, then, as I conceive it, is indeed a substitute for
18 competition; and it is even a partly imitative substitute. But so is a
19 Diesel locomotive a partly imitative substitute for a steam
20 locomotive, and so is a telephone message a partly imitative
21 substitute for a telegraph message. What I am trying to emphasize
22 by these crude analogies is that the very nature of a monopolistic
23 public utility is such as to preclude an attempt to make the
24 emulation of competition very close. The fact, for example, that
25 theories of pure competition leave no room for rate discrimination,
26 while suggesting a reason for viewing the practice with skepticism,
27 does not prove that discrimination should be outlawed. And a
28 similar statement would apply alike to the use of an original-cost or
29 a fair value rate base, neither of which is defensible under the
30 theory or practice of competitive pricing.¹⁴²

31 Finally, Phillips states in The Regulation of Public Utilities:

32 Public utilities are no longer, if they were ever, isolated from the
33 rest of the economy. It is possible that the expanding utility sector
34 has been taking too large a share of the nation's resources,
35 especially of investment.^[footnote omitted] At a minimum, regulation
36 must be viewed in the context of the entire economy – and
37 evaluated in a similar context. Public utilities have always

¹⁴¹ David C. Parcell, *Cost of Capital Manual*, Society of Utility and Regulatory Financial Analysts, 2010 Edition, at 3-4.

¹⁴² James C. Bonbright, Principles of Public Utility Rates, Columbia University Press, 1961, at 106-107.

1 operated within the framework of a competitive system. They
2 must obtain capital, labor and materials in competition with
3 unregulated industries. Adequate profits are not guaranteed to
4 them. Regulation then, should provide incentives to adopt new
5 methods, improve quality, increase efficiency, cut costs, develop
6 new markets and expand output in line with customer demand. In
7 short, regulation is a substitute for competition and should attempt
8 to put the utility sector under the same restraints competition places
9 on the industrial sector.¹⁴³

10 **Q. DOES MR. GORMAN USE AUTHORIZED ROES BY REGULATORY**
11 **COMMISSIONS IN THE DERIVATION OF HIS RPM?**

12 A. Yes, he does. Given all this and all of the above, Mr. Gorman's concerns should
13 be dismissed by the Commission.

14 **Q. MR. GORMAN DISCUSSES YOUR APPLICATION OF THE PRPM.**
15 **PLEASE COMMENT.**

16 A. As discussed in my Direct Testimony,¹⁴⁴ the PRPM is based on the research of Dr.
17 Robert F. Engle, dating back to the early 1980s. Dr. Engle discovered that the
18 volatility of market prices, returns, and risk premiums clusters over time, making
19 prices, returns, and risk premiums highly predictable. In 2003, he shared the
20 Nobel Prize in Economics for this work, characterized as "methods of analyzing
21 economic time series with time-varying volatility ("ARCH").¹⁴⁵ Dr. Engle¹⁴⁶
22 noted that relative to volatility, "the standard tools have become the
23 ARCH/GARCH¹⁴⁷ models."

¹⁴³ Charles F. Phillips, *The Regulation of Public Utilities*, Public Utility Reports, Inc., 1993., at 173.

¹⁴⁴ D'Ascendis Direct Testimony, at 29-30.

¹⁴⁵ www.nobelprize.org.

¹⁴⁶ Robert Engle, *GARCH 101: The Use of ARCH/GARCH Models in Applied Econometrics*, *Journal of Economic Perspectives*, Volume 15, No. 4, Fall 2001, at 157-168.

¹⁴⁷ Autoregressive Conditional Heteroskedasticity/Generalized Autoregressive Conditional Heteroskedasticity.

1 In addition, the GARCH methodology has been well tested by academia
2 since Engle's, *et al.* research was originally published in 1982, 38 years ago. I use
3 the well-established GARCH methodology to estimate the PRPM model using a
4 standard commercial and relatively inexpensive statistical package, Eviews,¹⁴⁸ to
5 develop a means by which to estimate a predicted ERP which, when added to a
6 relevant bond yield, results in an indicated cost of common equity.

7 Also, the PRPM is in the public domain, having been published six times
8 in academically peer-reviewed journals: Journal of Economics and Business (June
9 2011 and April 2015),¹⁴⁹ The Journal of Regulatory Economics (December
10 2011),¹⁵⁰ The Electricity Journal (May 2013 and March 2020),¹⁵¹ and Energy
11 Policy (April 2019).¹⁵² Notably, none of these articles have been rebutted in the
12 academic literature.

13 Finally, the PRPM has also been presented to a number of utility
14 industry/regulatory/academic groups including the following: The Edison Electric

¹⁴⁸ In addition to Eviews,[®] the GARCH methodology can be applied and the PRPM derived using other standard statistical software packages such as SAS, RATS, S-Plus and JMulti, which are not cost-prohibitive. The software that I used in this proceeding, Eviews,[®] currently costs \$600 - \$700 for a single user commercial license. In addition, JMulti is a free downloadable software with GARCH estimation applications.

¹⁴⁹ See, Eugene A. Pilotte, and Richard A. Michelfelder, *Treasury Bond Risk and Return, the Implications for the Hedging of Consumption and Lessons for Asset Pricing*, Journal of Economics and Business, June 2011, 582-604. See also, Richard A. Michelfelder, *Empirical Analysis of the Generalized Consumption Asset Pricing Model: Estimating the Cost of Capital*, Journal of Economics and Business, April 2015, 37-50.

¹⁵⁰ See, Pauline M. Ahern, Frank J. Hanley, and Richard A. Michelfelder, *New Approach to Estimating the Equity Risk Premium for Public Utilities*, The Journal of Regulatory Economics, December 2011, at 40:261-278.

¹⁵¹ See, Richard A. Michelfelder, Pauline M. Ahern, Dylan W. D'Ascendis, and Frank J. Hanley, *Comparative Evaluation of the Predictive Risk Premium Model, the Discounted Cash Flow Model and the Capital Asset Pricing Model for Estimating the Cost of Common Equity*, The Electricity Journal, April 2013, at 84-89; see also, Richard A. Michelfelder, Pauline M. Ahern, and Dylan W. D'Ascendis, *Decoupling, Risk Impacts and the Cost of Capital*, The Electricity Journal, January 2020.

¹⁵² See, Richard A. Michelfelder, Pauline M. Ahern, and Dylan W. D'Ascendis, *Decoupling Impact and Public Utility Conservation Investment*, Energy Policy, April 2019, 311-319.

1 Institute Cost of Capital Working Group; The NARUC Staff Subcommittee on
2 Accounting and Finance; The National Association of Electric Companies
3 Finance/Accounting/Taxation and Rates and Regulations Committees; the
4 NARUC Electric Committee; The Wall Street Utility Group; the Indiana Utility
5 Regulatory Commission Cost of Capital Task Force; the Financial Research
6 Institute of the University of Missouri Hot Topic Hotline Webinar; and the Center
7 for Research and Regulated Industries Annual Eastern Conference on two
8 occasions.

9 **Q. HAS MR. GORMAN ACCURATELY DESCRIBED YOUR APPLICATION**
10 **OF THE PRPM?**

11 A. No, he has not. Although he states that the PRPM measures the volatility of
12 annual returns, based on a time varying volatility comparison of the volatility of a
13 stock index total return, compared to the volatility of a Treasury bond income
14 return, he is incorrect. As discussed in my Direct Testimony, the PRPM is based
15 on the volatility of monthly risk premiums, not separate measures of returns and
16 yields. Also, as discussed previously, using the income return, or yield, as an
17 input to a risk premium calculation is appropriate as the yield is the riskless part
18 of the return.

19 **Q. WHAT IS YOUR RESPONSE TO MR. GORMAN'S ARGUMENT THAT**
20 **YOU HAVE "NOT ACCURATELY MEASURED THE LEVEL OF THE**
21 **RISK PREMIUM, NOR ACCURATELY CHARACTERIZED THE**
22 **VOLATILITY ACROSS TIME CAUSED BY MARKET FACTORS"?¹⁵³**

23 A. I do not agree with Mr. Gorman's statement. Schedule DWD-11R charts the

1 predicted MRPs (using the GARCH methodology) and the actual MRPs over the
2 income return on long-term U.S. Treasury Bonds from 1936-2019. The volatility
3 pattern of the predicted MRPs is nearly identical to the volatility pattern of the
4 historical MRPs.¹⁵⁴ As such, the PRPM accurately reflects the volatility in MRPs.

5 **Q. HAS THE PRPM BEEN IMPLICITLY ACCEPTED BY OTHER**
6 **REGULATORY COMMISSIONS?**

7 A. Yes. In Docket No. 2017-292-WS, the Public Service Commission of South
8 Carolina (“PSC SC”) accepted Blue Granite Water Company’s entire requested
9 ROE, which included the PRPM. The relevant portion states:

10 The Commission finds Mr. D’Ascendis’ arguments persuasive. He
11 provided more indicia of market returns, by using more analytical
12 methods and proxy group calculations. Mr. D’Ascendis’ use of
13 analysts’ estimates for his DCF analysis is supported by consensus,
14 as is his use of the arithmetic mean. The Commission also finds
15 that Mr. D’Ascendis’ non-price regulated proxy group more
16 accurately reflects the total risk faced [by] price regulated utilities
17 and CWS. Furthermore, there is no dispute that CWS is
18 significantly smaller than its proxy group counterparts, and,
19 therefore, it may present a higher risk. An appropriate ROE for
20 CWS is 10.45% to 10.95%. The Company used an ROE of 10.5%
21 in computing its Application, a return on the low end of Mr.
22 D’Ascendis’ range, and the Commission finds that ROE is
23 supported by the evidence.¹⁵⁵

24 It should also be noted that in the above passage the PSC SC also found my non-
25 price regulated proxy group to be appropriate.

¹⁵³ Gorman Direct Testimony, at 67.

¹⁵⁴ Because the predicted MRPs are derived from the predicted variance squared, they will always be positive, but their magnitude will mimic that of the actual MRPs.

¹⁵⁵ PSC SC Docket No. 2017-292-WS, Order No. 2018-345, at 14 (May 17, 2018).

1 In addition, in Docket No. W-354, Subs 363, 364 and 365, the State of
2 North Carolina Utilities Commission approved my RPM and CAPM analyses,
3 which used PRPM analyses as presented in this proceeding. The relevant portion
4 of the order states:

5 In doing so the Commission finds that the DCF (8.81%), Risk
6 Premium (10.00%) and CAPM (9.29%) model results provided by
7 witness D'Ascendis, as updated to use current rates in D'Ascendis
8 Late-Filed Exhibit No. 1, as well as the risk premium (9.57%)
9 analysis of witness Hinton, are credible, probative, and are entitled
10 to substantial weight as set forth below.¹⁵⁶

¹⁵⁶ NCUC Docket No. W-354, Sub 363, 364, 365, *Order Granting Partial Rate Increase and Requiring Customer Notice*, at PDF 72 (March 31, 2020).

1 **2. CAPM and ECAPM**

2 **Q. MR. GORMAN STATES THAT YOUR MRP ESTIMATES DERIVED**
3 **FROM BLOOMBERG AND *VALUE LINE* DATA “ARE OVERSTATED**
4 **BECAUSE THEY ARE BASED ON DCF STUDIES WITH GROWTH**
5 **RATES THAT ARE NOT SUSTAINABLE.”¹⁵⁷ PLEASE RESPOND.**

6 A. I disagree with Mr. Gorman’s statement. The implied expected market returns
7 using Bloomberg and *Value Line* data are only two out of six measures. The
8 average implied market return for my Direct and Rebuttal Testimonies represent
9 the approximately 48th to 49th percentile of actual returns observed from 1926 to
10 2019 as shown on Schedule DWD-12R. As will be discussed below, multiple
11 measures gives greater insight into the investor-required return than a limited
12 number of measures. The average implied market return for my Direct and
13 Rebuttal Testimonies are 13.01% and 12.32%, respectively, which are comparable
14 to the average historical market return of approximately 12.00%. Moreover,
15 because market returns historically have been volatile, my market return estimates
16 are statistically indistinguishable from the long-term arithmetic average market
17 data on which Mr. Gorman relies.¹⁵⁸

18 Mr. Gorman also asserts the MRPs estimated from my projected market
19 returns are “inflated and not reliable.”¹⁵⁹ Recalling that Mr. Gorman includes
20 historical data among the methods he uses to estimate the MRP, I therefore
21 produced a histogram of the annual MRPs reported by Duff & Phelps. The results
22 of that analysis, which are presented in Chart 12 below, demonstrate average

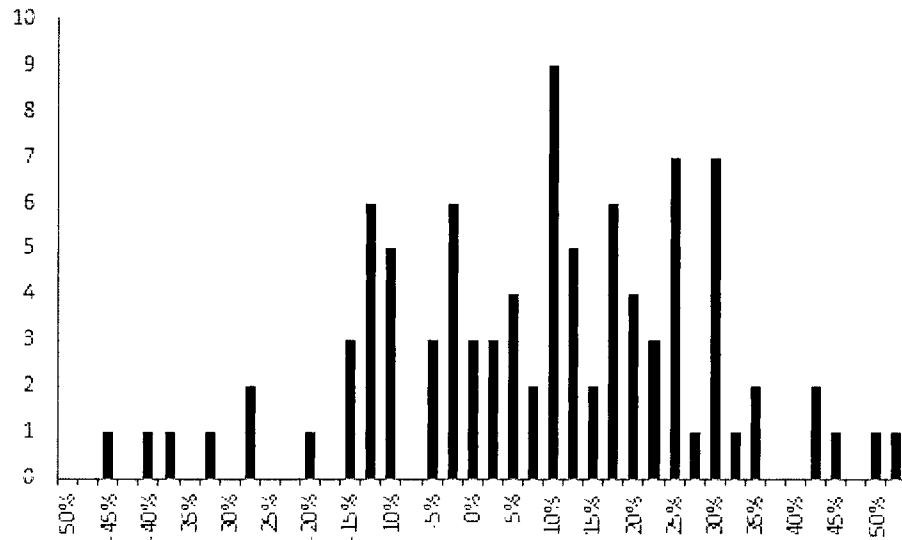
¹⁵⁷ Gorman Direct Testimony, at 71.

¹⁵⁸ SBBI-2020, at Appendix A-1.

¹⁵⁹ Gorman Direct Testimony, at 72.

MRPs of 10.92% (Direct Testimony) to 9.59% (Rebuttal Testimony) occur approximately 44% to 49% of the time.

Chart 12: Frequency Distribution of Observed Market Risk Premia, 1926-2019¹⁶⁰



3. Non-Price Regulated Proxy Group

Q. WHAT IS YOUR RESPONSE TO MR. GORMAN'S CONCERN WITH THE USE OF A NON-REGULATED PROXY GROUP?

A. As discussed in my Direct Testimony, the selection criteria for my non-regulated proxy group were based on a range of unadjusted Beta coefficients (a measure of systematic risk) and a range of standard errors of the regression (a measure of unsystematic risk), which gave rise to those Beta coefficients, and together measure total risk,¹⁶¹ not solely Beta coefficients, as Mr. Gorman implies.¹⁶²

As to the comparability of my non-price regulated and utility proxy groups, the selection criteria for my non-price regulated proxy groups were based

¹⁶⁰ Schedule DWD-12R.

¹⁶¹ D'Ascendis Direct Testimony, at 48-49.

¹⁶² Gorman Direct Testimony, at 78.

1 on ranges of two measures of risk, the unadjusted beta of the proxy group, which
2 measures systematic, or market risk, and the standard error of the regression,
3 which gave rise to those betas, measuring non-systematic or diversifiable risk.
4 Systematic plus non-systematic risk is one definition of total risk.¹⁶³ This is
5 agreed to by both Mr. Gorman¹⁶⁴ and Dr. Woolridge¹⁶⁵ in their direct testimonies.

6 Business and financial risks may vary between companies and proxy
7 groups, but if the collective average betas and standard errors of the regression of
8 the group are similar, then the total, or aggregate, non-diversifiable market risks
9 and diversifiable risks are similar, as noted in “Comparable Earnings: New Life
10 for an Old Precept” provided in Schedule DWD-13R. Thus, because the non-
11 price regulated companies are selected based on analyses of market data, they are
12 comparable in total risk (even though individual risks may vary) to the Utility
13 Proxy Group.

¹⁶³ Business risk plus financial risk is a second definition of total risk.

¹⁶⁴ Gorman Direct Testimony, at 48.

¹⁶⁵ Woolridge Direct Testimony, at 41.

1 **Q. IS THERE A SPECIFIC ADVANTAGE TO USING YOUR SELECTION**
2 **CRITERIA, WHICH USES MEASURES OF SYSTEMATIC AND**
3 **UNSYSTEMATIC RISK, INSTEAD OF USING THE COMBINATION OF**
4 **BUSINESS AND FINANCIAL RISK?**

5 A. Yes. *Value Line* unadjusted Beta coefficients and the standard error of the
6 regressions giving rise to those Beta coefficients are measurable objective values,
7 whereas total business risk¹⁶⁶ and financial risk measures are more subjective. In
8 view of all of the above, Mr. Gorman's concerns regarding my Non-Price
9 Regulated Proxy Group should be dismissed by the Commission.

10 **VI. RESPONSE TO CARD WITNESS WOOLRIDGE**

11 **Q. PLEASE BRIEFLY SUMMARIZE DR. WOOLRIDGE'S ROE ANALYSES**
12 **AND RECOMMENDATIONS.**

13 A. Dr. Woolridge argues the Company's ROE is within a range of 7.60% to 9.15%,
14 and provides a specific recommendation of 9.00%, which is based on the upper
15 end of the range of results based on his constant-growth DCF model.¹⁶⁷

16 **Q. WHAT ARE THE SPECIFIC AREAS IN WHICH YOU DISAGREE WITH**
17 **DR. WOOLRIDGE'S ANALYSES AND RECOMMENDATIONS?**

18 A. There are several areas in which I disagree with Dr. Woolridge, including:

- 19 1. The issues he raises around the Company's capital structure;
- 20 2. His sole reliance on and his application of the DCF model;
- 21 3. His application of the CAPM;

¹⁶⁶ Business risk in excess of size risk, which is measurable, as discussed previously.

¹⁶⁷ Woolridge Direct Testimony, at 54.

1 4. His failure to reflect the Company's greater risk due to their small size
2 relative size to the proxy group; and

3 5. His failure to reflect the Company's riskier bond rating relative to the
4 proxy group.

5 **A. Capital Structure**

6 **Q. PLEASE BRIEFLY SUMMARIZE DR. WOOLRIDGE'S DISCUSSION**
7 **REGARDING THE COMPANY'S CAPITAL STRUCTURE.**

8 A. Despite his acceptance of the Company's proposed capital structure, Dr.
9 Woolridge notes several issues as it relates to the Company's proposed capital
10 structure, including: (1) the Company has used short-term debt to significantly
11 finance operations; (2) the Company's proposed capital structure contains a higher
12 common equity ratio than the proxy groups; and (3) the use of debt from
13 SWEPCO's parent, AEP, to finance SWEPCO equity.¹⁶⁸ In his discussion, Dr.
14 Woolridge accepts the Company's proposed capital structure, but asserts that the
15 Company's proposed capital structure should be taken into consideration in
16 setting the authorized ROE for SWEPCO.¹⁶⁹

17 **Q. IS THE USE OF SHORT-TERM DEBT APPROPRIATE IN SETTING**
18 **THE RATE OF RETURN FOR SWEPCO?**

19 A. No, it is not. First, short-term debt generally is used to fund working capital
20 requirements. Those requirements have a strong seasonal pattern; they are not
21 permanent as are the assets included in rate base. Because short-term debt funds

¹⁶⁸ *Ibid.*, at 18-23.

¹⁶⁹ *Ibid.*, at 23.

1 short-term working capital needs, it should not be included in the ratemaking
2 capital structure.

3 Second, prudent financing practice calls for long-term assets (such as rate
4 base items) to be financed with long-term securities. Doing otherwise would
5 expose the Company's ratepayers to both refinancing risk (that is, the risk of not
6 being able to roll-over short-term debt as it comes due), and interest rate risk
7 (incurring higher interest costs as maturing short-term debt is refinanced).
8 Although short-term debt may be used as an interim source of financing (that is,
9 until a sufficiently large balance has been accumulated to be efficiently financed
10 by long-term securities), it should not be seen as a permanent source of capital.

11 **Q. ARE COMMON EQUITY AND LONG-TERM DEBT THE TWO**
12 **SOURCES OF CAPITAL COMMONLY CONSIDERED IN**
13 **ESTABLISHING A UTILITY'S RATEMAKING CAPITAL STRUCTURE?**

14 A. Yes, they are.

15 **Q. WHY IS THAT THE CASE?**

16 A. The principal reason is that the assets included in rate base are long-lived and are
17 financed with correspondingly long-lived securities. That is, utilities generally
18 follow the financing practice commonly referred to as "maturity matching," which
19 matches the lives of assets being financed with the maturity of the securities
20 issued to finance those assets. Under that practice, the overall term structure of
21 the utility's long-term liabilities, including both debt and equity, correspond to the
22 life of its long-term assets. As explained by Brigham and Houston:

23 In practice, firms don't finance each specific asset with a type of
24 capital that has a maturity equal to the asset's life. However,